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ABSTRACT

The program activities, curriculum, and evaluation of the Pennsylvania Research in Infant Development and Education (PRIDE) Project are described in this report. The project is an educational effort to accelerate the development of children, 12-52 months of age, by providing developmentally enriching experiences in a controlled environment which enhances the growth of sensory, conceptual, and language abilities. Four principal components constitute the PRIDE Project: (1) The Center Early Learning Program, (2) The Home Early Learning Program, (3) The Cognitively Oriented Prekindergarten, and (4) The Parent Involvement Program. The Center Early Learning Program is the primary component of the PRIDE Project and consists of a 2-year sequence, beginning at the first level with a group of children between 12 and 20 months of age, with participating children being brought to the center each weekday for developmental sessions with a teacher and aides. The Home Early Learning Program consists of a 2-year sequence with children 12 to 20 months of age, in which children are visited in their homes by individual tutors. The Cognitively Oriented Prekindergarten forms the third year of the center-based preschool programming and involves children previously enrolled in the Center and Home Early Learning Programs. The final component, the Parent Involvement Program, provides instruction to disadvantaged mothers in children's health care and mental development. Each of these components is discussed and evaluated in this report. (CS)

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THE PENNSYLVANIA RESEARCH IN INFANT DEVELOPMENT AND EDUCATION PROJECT

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Much of the success in program initiation and implementation is owed, in large measure, to the progressive orientation and cooperative participation of: Dr. Robert B. Hayes, Director of the Division of Research at the Pennsylvania Department of Education; Dr. Martin J. Higgins, Director of the Learning Research Center at West Chester State College; and Dr. Everett A. Landin, Director of the West Chester Educational Development Center. Special acknowledgement and appreciation is expressed to the following individuals, the results of whose constant dedication, hard work and long hours formed the nucleus of program operations: Miss Mary Ann O'Connell; Miss Shirley Grice; Miss Pattie Morgan; Mrs. Linda McNally; Mrs. Pat Benes; Miss Christine Stetler; Mrs. Jane Ann Kulp, and Mrs. Anne Avery. Appreciation is also expressed

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This report is dedicated to those children who have been participants, or are currently participants, of the programs described herein. May they continue to derive benefit from the unique experiences in which they have been a part, and may they continue to exemplify the progress being made toward the achievement of man's unrealized potential through early development and education.

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THE PRIDE PROJECT

AND

ITS COMPONENT PROGRAMS

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INTRODUCTION

The Pennsylvania Research in Infant Development and Education (PRIDE) Project is an educational effort to accelerate the development of children from a variety of cultural and social backgrounds. It represents a cooperative effort by college, community, private, and state agencies to stimulate the development of children, 12 - 52 months of age, by providing developmentally enriching experiences in a controlled environment which enhance the growth of sensory, conceptual and language abilities.

Research on infant development has demonstrated the great importance of the first few years of a child's life. The quantity and quality of stimulation and attention given to children at the infant and toddler stages of their development has a pronounced influence upon the individual growth patterns they will assume. Children who do not receive adequate stimulation and attention in their early years later tend to enter school at a relative developmental disadvantage as compared with other children. Such disadvantaged children do not achieve well in our school systems (e.g. Cooper, 1964; Deutsch, 1965; Karp & Sigel, 1965). They enter school with lower abilities as measured by our typical aptitude and achievement instruments, and maintain this relative disadvantage as they go through the educational system. The gap between normative standards and their performance generally increases with time, effecting what is sometimes referred to as a cumulative deficit and frequently ending in academic and vocational failure (Bremner, 1964; Havighurst, 1966; Thompson, 1968).

The content and causes of the problem have been investigated and described from several points of view, and a large number of studies have indicated the early origin or genesis of the phenomenon. Davis (1964)

reports that by the time they are two years of age, the children from lower socioeconomic groups are already inferior in verbal skills to those from the middle class. Bruner (1960, 1964) argues that exposure to normally enriched environments makes the development of cognitive strategies possible by providing intervening opportunities for trial and error learning. Disadvantaged children often have a meager environmental foundation upon which to develop such cognitive skills and are generally unprepared to cope with the formal intellectual and learning demands of the school.

Cumulative Deficiency Phenomenon

Recent and exhaustive reviews of the research pertaining to the education of the disadvantaged indicate that such children spend less time in direct interaction with their parents, score lower than more favored groups on intelligence and achievement tests, and are more likely than other groups to have a negative self-image and to lack self-confidence. In addition, patterns of future time orientation and striving for delayed, often symbolic, gratification are much more common among middle class students than among disadvantaged students, and these patterns are seen as necessary for successful academic performance. On the average, by sixth grade, disadvantaged children are about two years behind grade norms in reading and arithmetic as well as in most other subjects. One of the consequences of this deficit is that dropping out of school is much more frequent, and this in turn leads to less mobility and opportunity in the occupational sphere. The achievement deficits of these children are cumulative, and this increase over time seems to reflect some basic weaknesses in both curriculum and school practices for these children.

Bernstein (1960) considers the cumulative deficiency phenomenon to be a result of the failure to develop an elaborated language system with accurate grammatical order and logical modifiers, mediated through a grammatically complex sentence structure, with frequent use of prepositions and impersonal pronouns, and with discriminative selection of adjectives and adverbs. These characteristics and others, according to Bernstein, are necessary for giving direction to the organization of thinking within a culture. The absence of these within an individual deprives him of the verbal strategies essential to vertical social and economic mobility. Elsewhere, Bernstein (1961) describes lower class language as typified by rigidity of syntax and restricted use of formal possibilities for verbal organization. He considers the educational disadvantage of lower class pupils to be an experientially induced cultural outcome, transmitted and sustained through the effects of linguistic processing.

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Toward A Solution

The geographical area from which children participating in the PRIDE Project were drawn, in particular, has been the focus of an influx of lower socioeconomic families presenting the problems of educating children from backgrounds of both urban and rural poverty. The composition of this influx has included both poor White and Black families from larger urban areas and a concentration of Puerto Rican migrant families of rural origin. For children from these families, their environment presents an insufficient medium for acquiring the type of educational development so essential for school achievement.

The thesis that certain environmental conditions have a retarding effect upon psychological processes, including intellectual development, has been borne out in experiments on both animals and human beings (e.g. Hebb, 1949; Hunt, 1961). That improvement of environmental conditions can have a significantly positive impact upon the intellectual development of such children is also supported by a number of experimental studies (e.g. Skeels, Updegraff, Wellman, & Williams, 1938; Wellman, 1940; Skodak & Skeels, 1949; Clarke & Clarke, 1959).

Bloom (1964) encourages the initiation of programs for disadvantaged children as early as possible. At no other time is the IQ more variable than in the preschool years. His studies indicate that early environment can alter the IQ of identical twins by as much as twenty points. During the first years of life, the IQ is susceptible to marked change. The need for such intervention at an early age is, therefore, of primary importance in the development of the disadvantaged.

Early childhood intervention is at the very heart of the effort to reconstruct the environment which educationally incapacitates certain children before they enter school. Comprehensive preschool programs are essential for the alleviation of the early language and conceptual disabilities of such children (Kerner, 1968).

Although several important research studies offer support for the hypothesis that appropriate supplementary experiences at an early age can and do sometimes result in rapid and significant increases in behavioral development among educationally disadvantaged children, by far the majority of such programs have met with only marginal success. This has been due principally to the failure of such programs to sufficiently emphasize

language activities and to their starting too late. Moreover, the dissipation of evidenced gains over time or after program termination generally stems from one or more of the following conditions: (1) Program activities not broadly based with skills age - and situation - specific; (2) Program offered too late with activities of remedial rather than preventative nature. There was, thus, a need for a new and different kind of program approach to the compensatory education problem.

Considerable speculation remained, however, as to how early in the child's life such intervention should take place in order to maximize program effectiveness with a minimum of associated costs.

From Piaget's work, in particular, it appears that young children have the ability to deal on the intuitive level with many kinds of problems and to solve them without being able to verbalize them. Thus, children are able to conceptualize at a very early age, possibly too early an age to be significantly aided in this area of development by our traditional preschool and kindergarten programs. It was the purpose of the PRIDE Project to investigate the possibility of achieving significant cognitive gains by focusing preschool intervention efforts upon children younger than those now being serviced in traditional programs.

The principal approach of this Project is to attempt to accelerate the cognitive development of the participating children through initial reinforcement of perceptual skills and later emphasis upon conceptual and language abilities. Cognitive development is here viewed as the progressive sophistication of the internal information processing system of the child. It is the gradual organization of the neurological components of this system which ultimately, and at various stages, determines the operational level of the

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child's cognitive ability. From this perspective, cognitive development is seen to originate in the more fundamental development of sensory reception, perception, and discrimination abilities.

THEORETICAL APPROACH

Aside from the knowledge gained through his phylogenetic inheritance, the human neonate has a great deal to learn if his expected development into a functionally autonomous rational coper is eventually to be realized. It soon becomes apparent, however, that the infant, as his forebears, will find opportunity for only a rather limited, though adequate, means for gaining such information relating to the world around him. As is the way with every infant, the gathering and processing of sensory information must play the primary role in the developmental process. The child's senses are his only means for interaction with his environment and therefore his only means for development: cognitively, socially, emotionally, or otherwise.

Although the senses do provide the only uninherited raw material for the developmental process, a great deal happens between the input to, and the output from the developing organism. The PRIDE Project approach to curriculum construction has been guided by a conceptualization of the developmentally disadvantaged child as being characterized principally by deficiencies on the receptive side of this information processing characterization. This in turn may produce cumulative receptive deficiencies and consequent disabilities on the expressive side. In the present context we may refer to the child's receptive abilities as those which are utilized to gain information from his environment and to meaningfully process such information. The child's expressive abilities are those utilized to undertake purposeful interaction with his environment.

The model according to which the PRIDE curriculum has been developed, therefore, stresses the development of receptive abilities within the

child, while allowing opportunities for expression and elaborating upon the child's expressive undertakings. In terms of cognitive development as a receptive ability, particularly, we may identify three principal stages which are fundamental to such development and which form the theoretical basis for the type of pedagogical approach utilized in the PRIDE Project:

1. Perception: The interpretation of sensations to form perceptions.
2. Conception: The integration of perceptions to form conceptions.
3. Cognition: The integration of perceptions to form cognitions.

As used in this context, perception refers to the interpretation of sensations to form perceptions. This stage would involve the processes of sensation and sensory discrimination. Any deficiencies at this level either with reception of sensory stimuli or confusion among similar sets of stimuli would cause a primary disruption of the data base for all processing operations at the higher levels and would produce extensive fundamental behavioral consequences within the affected individual. The second stage, conception, in the present context refers to the integration of perceptions to form conceptions. It is at this stage that the critical processes of perceptual integration and perceptual generalization are encompassed. These enable the individual to form integrated perceptions of various specific aspects of his environment and to then generalize from these specific integrated observations to abstract conceptions of these certain aspects. The third and final stage, that of cognition, is the culmination of the cognitive development model. This stage involves the manipulation of conceptions to form cognitions. It incorporates the basic processes of classification, correspondence, conservation, seriation,

and conceptual association as the basic building blocks of higher order cognitive abilities which go to make up the primary academic ability areas.

The model was developed in response to the findings in many compensatory research programs that established gains generally disappeared within a short time after cessation of programming. It was felt that this failure was frequently due to either insufficient emphasis upon basic abilities relating to the perception or conception process as outlined above, or to insufficient attention to elaboration at the third stage, the stage of cognition. Thus, some programs may have provided emphasis on basic multi-sensory stimulation and discrimination without providing a continuum of programming through the second stage, that of conception. Other compensatory and remedial programs have concentrated almost exclusively upon higher-order cognitive abilities, typical of the academic areas, to the exclusion of more basic abilities and have likewise failed due to the lack of any real change in the underlying processes which are necessary for acquiring and sustaining new learning.

Perception

The various senses serve as measuring instruments for the organism, providing it with a means for sampling various aspects of the various phenomena which surround it. As with any instrument of measurement, the information or data provided must be both reliable and valid in order to insure proper processing and consequent results. Thus, one variable which has a potentially pronounced effect upon the child's ability to develop or his rate of development is his ability to accurately

and reliably perceive sensory stimuli via one or more of his senses. Since inaccuracy in perception leads consequently to inaccuracy of discrimination, some extent of developmental impairment may occur as a result of such afferent distortion in either perception, discrimination, or both capacities. Disabilities in perception can create inaccuracies in the sensory information received by the individual. Consequent conceptual distortion may arise as a result of the processing of such faulty information, even assuming that the processing mechanism itself is operating properly. It is conceivable that serious perceptual disability might result in basic conceptual distortion, forming a foundation for distortion to accumulate upon distortion.

Thus, it is important that any initial deficits in perception be given early remedial attention before the problem is too greatly compounded. Moreover, since there is evidence of degeneration through disuse in some sensory receptor organs, a further objective must provide for a sufficiency of stimulus variety and diversity to prevent such sensory retrogression.

Perceptual Integration

Another variable on the input side of this information processing model is the extent to which information received independently by individual sensory centers can be integrated, either cortically or subcortically, and either before or after it has been interpreted. The areas of comparative neurophysiology and comparative psychology have been generally in agreement that the understanding of the underlying and

fundamental mechanisms relating to phylogenetic differences in the plasticity and modifiability of behavior is based upon the recognition that, in ascending the vertebrate series from the most simple to the most complex of organisms, unimodal sensory control of behavior comes to be supplanted or transcended by multimodal and intersensory mechanisms of control (Birch, 1954; Maier & Schneirla, 1935). The evolution of the nervous system has led, not to the establishment of new senses for increased efficiency of perceptual operation within the environment, but rather to a much closer liaison and integration of already existing senses. It is this integration process which characterizes the second stage of our three-stage model, that of cognition.

As was pointed out early by Pavlov (1927), one of the first abilities affected adversely by damage to the central nervous system is the degree to which sensory pathways from different modalities may become equivalent to each other. It remained to be demonstrated, however, that the ability to integrate perceptual information (cognition) was a variable independent of the ability for unimodal perception. Experiments on pattern discrimination and reproduction in brain damaged subjects provided some clue as to the independence of these two phenomena. The results of such studies (Birch & Bortner, 1960; Bortner & Birch, 1962) are suggestive of the existence of functionally autonomous systems: one system which develops earlier and is of a more primitive form, and another system which develops later and is of a more complex and sophisticated nature. These two systems seem to be affected differently by

brain damage. The more sophisticated intermodal system involving an integration of modalities serves as the superordinate system, with the individual senses operating only at the intramodal level serving as the subordinate.

That this integration process is itself in the normal child an evolving entity was demonstrated in a study by Birch and Lefford (1963) which showed such processing ability improving with age in a manner approximating the typical logarithmic growth curve. Thus, it is suggested that disabilities in the integrative process may be remediable and even preventable if intervention efforts are initiated before or during the critical period.

Perceptual Integration and Cognitive Development

While the developmental nature of intersensory functioning seems apparent, some speculations as to the relationship between sensory integration and such higher and more complex mental processes as reading have received attention. Drawing support in part from some of the classic works of previous investigators in the area of intersensory development (Abbott, 1882; Sherrington, 1951; Renshaw, 1930; Renshaw, Wherry & Newlin, 1930; Renshaw & Wherry, 1931; Birch, 1962) a relationship was postulated to exist between ability for perceptual integration, specifically auditory-visual integration, and ability for learning to read.

Birch and Belmont (1964) conducted the initial experiment designed specifically to test this hypothesis. Working with a sample of 150 nine-year-old retarded readers from the lowest 10% of their population

and a group of 50 normal readers matched on age, sex, and school class, they administered to all subjects an auditory-visual pattern test to test auditory-visual integration which consisted of 10 tapped auditory rhythms to be translated into visual dot patterns through a three-option multiple-choice task. Number of correct responses on the pattern test was found to discriminate significantly between the two groups, even after an effort was made to control for WISC-IQ differences.

Although this initial study tended to lend support to a rather challenging hypothesis, it remained to be demonstrated in a more sophisticated and more appropriate manner than the relationship between auditory-visual integration and reading was not a spurious one created as a by-product of the relationship between reading and IQ and between auditory-visual integration and IQ. This was demonstrated rather convincingly in a series of related studies that followed this initial effort (Birch & Belmont, 1965; Kahn & Birch, 1965).

A significant extension of research on perceptual integration, specifically of the auditory and visual modes, is found in the work of Cravioto, Gaona and Birch (1967). In a study of 296 children aged 7 through 12 who were in the upper and lower 25% of their respective age group with regard to height, these investigators found pronounced differences between the two groups on auditory-visual integrative competency. Since previous studies had indicated a definitive relationship between growth achievement and early exposure to malnutrition, particularly at the extremes of the distribution, the investigators inferred the existence of a relationship between exposure to early malnutrition and deficiencies in auditory-visual integration competency. The work of Davidson and

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and Dobbing (1966), showing a malnutrition-vulnerable stage in CNS development during the myelinization period extending from the seventh intrauterine month through the first few months after birth, suggests a link between malnutrition deficient myelinization of nerve fibers, poor auditory visual integration and poor reading.

Despite the research that has been conducted to date in the area, there is need for further experimentation on the physiological and psychological levels. There is also need for educational studies on the relationship between such integrative abilities and abilities for achievement. It has become evident that these integrative abilities not only play a significant role during the child's very early development, but also have a continuing and more pronounced effect on the child's learning and utilization of the various communicative abilities which form the cornerstone of social living, social learning and the transmission of knowledge.

The basic communicative tools through which the child can interact with his society and thereby his culture - listening, speaking, reading, and writing - become the means for the acquisition of knowledge through experience and the methods for creative self-expression. As such these abilities are by-products and in continual dependency upon the abilities for perceptual integration. Thus the aforementioned stages of perception and conception are prerequisite steps to the process of cognition or the third stage of cognitive development as it is here operationally defined. It is at this level of functioning that the more academic aspects of the formal educational experience may be most profitably introduced.

The principal initial emphasis of the PRIDE Project is to build within each child the fundamental abilities involved in interpreting sensations to form perceptions and in integrating perceptions to form conceptions. These establish a firm foundation for an accelerated rate of cognitive development. The later emphasis of the PRIDE Project in higher order cognitive skills brings to realization this potential for accelerated growth.

DEVELOPMENT OF THE PRIDE PROJECT

What was needed in order to translate theory into effective educational practice was a set of teaching techniques which would allow children at the earliest stages of their development to work on certain problems, to undergo effective learning experiences, and to progress along the developmental continuum without necessarily having to provide verbal explanations or exchanges. This is an especially important consideration in the early education of disadvantaged children, where verbal facility often lags considerably behind intellectual potential. It was with this purpose in mind that preliminary work in the form of a pilot project (Dusewicz, 1970) was undertaken in the Spring of 1969.

The pilot project involved a small number of disadvantaged children from families whose income placed them below the poverty line. An intensive study was conducted on all of the children and their responsiveness to an experimentally developed curriculum. This curriculum was designed to provide a system of instructional techniques, following the above approach, which could be used effectively with children initially at the non-verbal level and which would provide a firm foundation for later verbal learning.

Results indicated considerable gains in behavior, mental age, and social development over the period of time that the pilot project was in operation. Such gains suggested that initiation of preschool programs with children as young as two years of age or less might indeed be effective and practical if they were designed in a developmental and programmed manner, emphasizing the types of cognitive activities and the kind

of foundation in perceptual skills provided as part of the experimental curriculum.

It was apparent also that further research was needed to adequately assess the effectiveness of the approach, and extensions of the principles and procedures employed during the brief pilot project were needed in order to develop a more comprehensive curriculum.

From the original center-based curriculum development program emerged a research project which encompassed an integrated complex of related child development programs, beginning in the Fall of 1969, and continuing up to the present date. Principal among these programs which now constitute the Pennsylvania Research in Infant Development and Education Project are the following:

1. The Center Early Learning Program
2. The Home Early Learning Program
3. The Cognitively Oriented Prekindergarten
4. The Parent Involvement Program

The Center Early Learning Program

The Center Early Learning Program is the primary component of the Pennsylvania Research in Infant Development and Education Project. According to research findings, children who receive insufficient stimulation and attention during infancy enter school at a relative developmental disadvantage compared to other children. It is the purpose of this center-based program to provide a developmentally enriching environment for very young preschool children, from disadvantaged families, in order to sufficiently prepare them to meet the eventual educational challenges of the formal school years. Approximately fifty children each year are initially

enrolled in the program.

The approach utilized is that of creating a developmentally stimulating learning center in which the participating child can spend a significant portion of his waking hours. In this center, the children participate in activities designed to accelerate their overall development, initially through reinforcement of perceptual skills and later by emphasizing conceptual and language abilities.

The Center Early Learning Program consists of a two-year sequence, beginning at the first level with a group of children between 12 and 20 months of age and progressing for the second year into a more advanced program. Participating children are brought to the center each weekday for developmental sessions with a teacher and aides. Among the varied center activities in which the children participate can be found: activities to strengthen sensory perception and discrimination skills; opportunities for developing cognitive strategies through trial and error learning; language activities; conceptual learning, creative and role playing activities; and activities stressing group interaction and social interdependence.

A comprehensive battery of tests has been used in evaluating the program. Among those measures administered on a pre- and posttest basis have been standardized tests assessing intellectual, language, and social development, as well as non-standardized tests for reading and math readiness. Over a number of years, the children participating in the Center Early Learning Program have demonstrated considerable and significant advances in all of the areas of development assessed on a consistent year-to-year basis.

The Home Early Learning Program

The Home Early Learning Program is a component program of the Pennsylvania Research in Infant Development and Education Project. This program strives to provide developmentally enriching experiences to children via a home-based approach. Accordingly, the child participates in developmental activities with a tutor in the familiar surroundings of the child's own home and with the availability of supportive reinforcement from his mother or significant others in his immediate surroundings. Approximately fifty children each year are initially enrolled in the program.

The chief goal of this home-based preschool program is to enhance the overall cognitive growth of the participating child through a progressive series of developmental activities. It is hoped that the home-based nature of the program might also stimulate interest, support and possibly participation from the parents and other family members in the home.

The Home Early Learning Program consists of a two-year sequence, beginning at Level I with a group of children, 12 to 20 months of age, and continuing for the second year into a Level II program. During both years of the program, children are visited by individual tutors. These tutors make two separate visits each week for forty minutes at a time, for a total of about 1-1/3 contact hours per week. All instructional materials and toys required for the activity sessions are supplied by the visiting tutor.

Multiple testings, conducted each year on a pre- and posttest basis, have indicated consistently successful program results.

The Cognitively Oriented Prekindergarten

The Cognitively Oriented Prekindergarten forms the third and final

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year of center-based preschool programming of the PRIDE Project. It is designed to provide educational experience culminating with the participating child's entrance into the kindergarten level of the formal school system. In their third and final year, children previously in the Center and Home Early Learning Programs are enrolled in the totally center-based Prekindergarten. Approximately forty-five children each year participate in this program.

The chief objectives of the Prekindergarten Program are several in number. The first is to forestall developmental regression generally found attributable to discontinuities in preschool programming and to consequently aid in retention of gains achieved during prior years. The second is to provide for further increases in development by building upon abilities and understandings internalized by the participating children in prior years. A third objective is to acclimate the children to a more structured, disciplined and group-oriented instructional environment which they may typically expect to encounter upon enrollment in the formal school system. Finally, it is also hoped that through such early educational experiences, these children would eventually develop: a repertory of skills for locating and learning new information and skills; a repertory of skills for problemsolving; and the motivation for continuous involvement in such learning and problem solving.

The Prekindergarten consists of two half-day classes, each involving one-half of the participating children. Each group meets for five sessions per week. The curriculum is divided into two parts: the academic and the general. The academic curriculum specifically covers the subject areas of reading, math, science, social studies, and health and safety, for all of which special instructional sequences have been developed. Instructional

time is devoted to the areas of reading and math on a daily basis, whereas the other subjects are treated at various designated times throughout the week. The general curriculum on the other hand, encompasses all other activities of the program, including: art, music, small and large motor exercises, and a variety of academic support and free play activities.

A vigorous evaluation of program effects has been undertaken, involving pre- and posttesting of all children on a comprehensive battery of developmental measures. This battery includes standardized measures of intellectual, language and social development, as well as specialized scales to measure math and reading readiness. Findings indicate highly positive results for children participating in the program.

The Parent Involvement Program

Developed as an integral part of the Pennsylvania Research in Infant Development and Education (PRIDE) Project, the Parent Involvement Program focuses on parental participation in compensatory education for infants (12 - 20 months of age) from disadvantaged families. This program is based on the premise that parents, given the proper knowledge and motivation to undertake enjoyable instructive activities helpful to their children's development, can contribute substantially to preparing their children for formal learning experiences.

The main goal of the Parent Involvement Program, therefore, is to give low-income disadvantaged mothers instruction and encouragement to teach their infants and toddlers many things at home which would help them later in preschool and school environments. Important objectives of the materials presented to each mother are to help her build a better understanding of her child and of child development, to provide activities

helpful to her child's physical, mental, emotional and social growth and to establish firmer bonds of mother-child interaction and communication.

The program of instruction consists of twenty-five weekly one-hour sessions presented by a tutor to the mother-participant in her home. Each session includes a discussion of some phase of child development, and the introduction and explanation of developmental activities, which the mother is to use with her child in the next week during daily fifteen-minute sessions. The success and problems of the child's previous activity sessions are discussed, as well as questions related to the activities.

The mothers are instructed to praise effort, not just success in the activity sessions and to abandon activities that bore or frustrate the children. The activities dealing with motor coordination, cognitive development, language, emotional growth, social growth and sensory discrimination are increased in difficulty as the lessons progress. The mothers record their children's weekly progress, rating each child's mastery of the materials, and they share these results with the tutor.

Results of the program are evaluated by two means: the unstructured feedback of comments from the mothers, and parents' responses to a structured interview-type survey containing questions of a general evaluative nature as well as items testing knowledge of the theoretical content areas of the program. Results indicate that participating mothers have generally positive attitudes toward the program. Interaction increases between the mothers and their preschool children, and the mothers' understanding of their children's behavior is also enhanced through participation in the program. Moreover, the mothers are usually able to observe considerable progress in their children's physical, mental, emotional and social skills.

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THE CENTER

EARLY LEARNING PROGRAM

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BACKGROUND

The Center Early Learning Program of the Pennsylvania Research in Infant Development and Education (PRIDE) Project represents an effort to systematically accelerate the cognitive, social and emotional development of participating infants and toddlers. The young child is perceived by the staff of the PRIDE Project as an inquisitive gatherer of sensory data who is striving to order his sense impressions. To maximize and develop his capacity to derive and sort data from his environment and to assist his formation of accurate and complete concepts, each child participates in an individualized program which fosters a hierarchy of sensory discrimination and integration skills and conceptual-language abilities. The children learn through experiences and activities presented in a developmental sequence either by individual instruction or in a group setting. Emphasis is given to the social and emotional development of the child, as well as his cognitive development.

The Center Early Learning Program consists of two groups: the Level I or Infant Group and the Level II or Toddler Group. Children are enrolled only at the Infant Level, and they range from twelve to twenty months of age by October 1. The groups, each numbering approximately twenty-five, attend school for a half-day session five days per week during the Fall and Spring semesters. The Level I children meet from eight o'clock to noon in five morning sessions each week. The Level II toddlers attend school daily from one o'clock to four o'clock. Transportation to and from school, breakfasts and snacks and the expenditures necessary for materials and tuition are supplied without cost to the parents. Support for these and other program operations is provided chiefly by the Pennsylvania State Department of Education and West Chester State College.

Enrollment Policy

Enrollments occur only prior to entrance into Level I in order to insure that all attending children have participated in a consistent and integrated learning experience from infancy. It is the goal of the recruitment staff to assemble a group of children derived from families representing a wide variety of cultural and social milieus. Toward this end, interested parents of appropriately aged children are solicited through extensive mailings and public media announcements briefly outlining the Program's aims and operation and specifying the age range of children being sought. Numerous referrals also supply potential participants.

Each responding family with a child meeting the age requirements is privately interviewed in the home. It is requested that, if possible, both parents participate in the interview and that the child be available to meet the interviewer. At the visit, the Center Early Learning Program staff member provides a description of the program. If then, or at a later date, the parents choose to make an application on their child's behalf, an extensive questionnaire is completed. Among the data solicited by this questionnaire is information as to the child's physical history, language and motor learning to date, composition and income of the household unit and any extraordinary situations the parents perceive as existing in the child's environment. The questionnaire is kept on file along with a detailed description written by the interviewer which specifies the physical appearance of the home and impressions regarding intrafamilial interaction patterns.

At the close of the recruitment period, typically the number of applications greatly exceeds the number of available spaces. Each application

is assigned a number and through a process of random selection the positions in the center are filled.

PROGRAM RESOURCES

The fine instructional staff and facilities available to the Center Early Learning Program represent a significant asset. These resources contribute considerably to the efficiency and the continued success of program operations.

Instructional Staff

A strength this program enjoys is a very low child-teacher ratio. The staff for each session of the program consists of a supervising teacher and approximately ten assistant teachers. The supervising teacher's responsibility in part consists of work in curriculum development. Under the guidance of the Project Director, she designs activities aimed to promote various forms of cognitive growth. Another aspect of her role is planning and executing the daily program. Her decision-making in this area is affected by ongoing performance evaluations which provide an up-to-date profile of each individual child's development. In addition, the supervising teacher assigns assistant teachers various preparative or instructional tasks and provides direction for carrying them out. Also, communication with parents is maintained through visits, letters and phone calls initiated by the supervising teacher.

The assistant teachers are undergraduate students employed by the PRIDE Project through the West Chester State College Student Work-Study Program. These students are most commonly education or psychology majors who perceive their employment as a learning experience as well as a source of income. Training of the assistant teachers is accomplished through several techniques. Each assistant teacher receives a manual prior to the

start of his employment which extensively details the philosophy and routines of the Project and his own job responsibilities. The teaching skills of the assistant teachers are further developed through regular workshop meetings and videotape or live demonstrations of effective materials and methods for use with infants and young children. Students also are seen in individual conferences with supervising teachers to assist them toward more effective interaction with the children. Students engaged in teaching particular skills receive additional training in the Center Early Learning Program's overall curriculum for the subject area and in specific approaches to be used in effecting the curriculum. Students are encouraged to innovate and, with guidance, often carry out projects of their own. In addition to the supervising teacher and undergraduate assistants, two West Chester State College graduate students are assigned to this program on a part-time basis. The graduate assistants work largely in the area of curriculum development and under the direction of the professional staff.

Instructional Facilities

The learning space employed by the Center Early Learning Program is located in the Learning Research Center at West Chester State College. Three rooms are used. The first is a large playroom equipped with a variety of curriculum materials. Movable cabinets are so placed in this fully carpeted room to define a table activities area, a free space area for general use and a quiet area for resting. Throughout these areas the children participate in free play and teacher-initiated group activities. While in this particular room the groups are usually interest-based and self-selected by the children. The atmosphere of this room is noisy and

bustling as the children involve themselves in interactions with one another, their teachers and their physical environment. It is especially in this environment that the children have an opportunity to work out and employ their social skills.

A smaller adjoining room, partitioned into four teaching stations, provides an area in which the individual children engage in learning experiences on a one-to-one basis. Here the focus is on developing those skills or concepts with which a particular child is just attaining mastery. The relatively quiet, non-distractive surroundings and the individual instruction employed at the teaching stations provide a situation in which a child's attention span is maximized and concentrated on a particular activity.

The Total Environment Room is a rectangular area in which a 360^{o} cylindrical projection surface and an extensive sight and sound system are utilized to provide experiences and sensory stimulation which otherwise would be less accessible to the children. The enclosed cylinder is entered through a flap door and the children and their teacher sit on its carpeted floor. Because the material employed in building the cylinder allows an image projected from outside the enclosure to pass through one wall of the cylinder and be reflected for viewing on the opposite internal wall, all projection equipment is located on the exterior of the cylinder. Consequently any distraction generated by the hardware is largely circumvented. Because the child's visual and auditory stimulations are entirely controlled in this room, a situation is created in which attention to the object at hand is intensely focused. Two or three children accompanied by a teacher generally comprise the audience for Total Environment Room presentations. The matter and form

of the presentation is dependent on the needs of the participating children. A trio of Infant Group members might be involved in developing the concept of "horse." In order to sharpen their perceptions of this animal, multiple images of both still and moving horses are projected on all 360° of the cylinder, while the audio equipment plays the sounds of horses neighing, snorting, and galloping. A few Toddlers working out the concept of "four" might view two slides simultaneously showing sets of various numbers. Under the direction of their teacher, they are encouraged to recognize and identify the set containing four members.

PROGRAM CURRICULUM

The program curriculum is designed to provide a structured sequence of development activities in which new abilities are continually built upon the foundation of abilities which have already been mastered. Curriculum activities begin in the first year with a concentration in the sensory and perception areas, progressing later to the conceptual and language areas, and finally to the more academic areas of reading and math instruction.

Sensory and Perception Activities

In the use of its staff and facilities, the basic approach of the Center Early Learning Program is to employ a curriculum which sequentially develops more acute perceptions through the individual senses and which also focuses upon behavioral task hierarchies requiring integration of the various senses for successful completion. In this way, the child progresses from simple to complex discriminate learning within each of his senses, and then continues from the simple to the complex in the area of tasks requiring the combination of information from two or more senses. Proceeding from the development of a firm foundation of sensory perceptual and discriminative skills, emphasis is placed upon utilizing these skills within the various sensory modes to master activities and tasks designed to develop conceptual and language abilities. In this way, the more basic sensory skills are applied toward the building of higher order cognitive abilities. During the activities aimed at enhancing the perception skills of the individual senses, materials designed for training in the olfactory, gustatory, auditory, tactile and visual

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senses are employed. After the child performs, for example, the gross tactile discrimination between a doll and a cup, he is moved through progressive steps to much finer tactile discriminations like, for example, the sorting of various grades of sandpaper.

A somewhat more detailed example of the hierarchical organization of sensory perception training for the children is the behavioral hierarchy relating to the visual perception area of color. Color charts, consisting of large colored paper discs, are mounted on sheets of white paper with paper pockets attached below the discs. Accompanying these charts are small discs made of colored paper which match those on the charts. The child is started out on the three primary color charts and then later is moved on to a six-chart combination of additional colors. The child progresses through a hierarchically arranged task sequence using these charts. In accordance with the sample ten-step list presented below, the child must successfully demonstrate performance on each task on three successive and independent occasions before moving on to the next level.

1. Upon removing single colored disc from one color pocket, child is able to replace it in only available open pocket (three-color task).

2. Upon removing any two colored discs from color pockets, child is able to replace them in their appropriate pockets (three-color task).

3. Upon removing three colored discs from color pockets, child is able to replace them in their appropriate pockets (three-color task).

4. Upon removing three colored discs from color pockets, child is able to replace them in their appropriate pockets when positions of charts are varied (three-color task).

5. Upon removing single colored disc from one color pocket, child is able to replace it in only available open pocket (six-color task).

6. Upon removing any two colored discs from color pockets, child is able to replace them in their appropriate pockets (six-color task).

7. Upon removing three colored discs from color pockets, child is able to replace them in their appropriate pockets (six-color task).

8. Upon removing three colored discs from color pockets, child is able to replace them in their appropriate pockets when positions of charts are varied (six-color task).

9. Upon removing six colored discs from color pockets, child is able to replace them in their appropriate pockets (six-color task).

10. Child is able to place all colored discs in appropriate pockets when positions of color charts are varied (six-color task).

A child who has mastered individual sense discrimination tasks is next challenged by problems calling upon perceptual integration ability. For example, a child is shown a picture of an orange. He is then encouraged to retrieve a real orange located inside an A-frame Tactile Box with a comb and sponge. In carrying out the teacher's request, the child recalls and combines his visual and tactile impressions. Later tasks in visual-tactile integration require the child to match objects with their visual images on the basis of a single tactile property. For example, the child might be asked to take material from the Tactile Box which feels like the material he sees represented in a picture of a sweater. The choices in the Tactile Box are swatches of material equal in size and shape but different in texture (cardboard, silk and wool knit).

Through a variety of experiences, other sensory integration combinations besides visual-tactile, such as olfactory-gustatory, visual-olfactory, auditory-visual or tactile-auditory, are developed in the child. Another important aspect of the instructional program, besides the child's capacity to conceptually link the perceptions of his various senses with

respect to a single object, is his ability to employ perceptual-motor coordination. Toward this end, the child is engaged in tasks aimed to foster such skills as eye-hand coordination and ear-hand coordination. Block building, pegging, bead-stringing, stacking rings on a pole and working with art materials are some of the activities used with the child to develop precision in eye-hand coordination. More complex eye-hand coordination patterns are developed after the child has acquired simple manipulation skills. These might take the form of reproducing in proper order a line of two red and three yellow pegs made by the teacher or some similar activity. To develop ear-hand coordination patterns, a child might be asked to reproduce, through hand claps, the beats of a drum as he is hearing them on a sound tape.

It should be pointed out that the child's emerging capacity to perceive accurately through his individual senses and his ability to integrate information from his various perceptions, is not brought about only through the use of hierarchically arranged training tasks. Many traditional activities are used to deepen the child's awareness of his sensory perceptions. For example, a child mastering color discrimination through work in any particular behavioral task hierarchy established for that concept is also learning this concept through numerous other experiences with the phenomenon of color. Egg dying allows him to see a startling color change. Assembling collages with bits of colored paper, crayoning, brush and finger painting and experiences with multi-color clay also draw the child's attention to color. These and numerous other direct experiences with color take an additional meaning when the child's teachers constantly strive to point out to him color similarities and differences and how to use color names. The amount of reinforcement needed by each child is

different but each is speeded in his sensory discrimination and integration skills by its use.

Conceptual and Language Activities

Concept and language developing activities encourage the child to employ his emerging perceptual discrimination and integration abilities to achieve an accurate and full understanding of objects and events he encounters. Beginning with the child's first concept, his self-concept, opportunities are provided for him to come to know himself and the world around him in the many forms in which they can be experienced. As the child progresses through the various concept building activities, he simultaneously is aided in assembling a vocabulary which better defines his perceptions and ideas.

Initially, the typical Level I child has not yet, in many respects, completely distinguished himself from his environment. Furthermore, he is at a pre-verbal stage of language development. For this child, numerous media aiding the formation of an awareness of self and many experiences with familiar objects are provided. For example, opportunities to observe himself in a mirror while his teacher points out his facial features and body parts helps to foster the growth of a better and more complete self-concept within the child. More advanced activities along the same lines might involve the child in games and songs which call upon him to use particular body parts. At a later stage in his development, usually in the Level II year, the child is taught to be more self-reliant. He is encouraged to assume responsibility in meeting some of his personal needs, for example, dressing himself. By acquiring control over such an aspect of his life, he comes to see himself as a more capable and competent individual.

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Concepts of events and objects outside the self are developed on direct experience whenever possible. Actual observation of, for example, a live rabbit is used to provide a basis for accurate concept formation. It also facilitates multi-sensory learning as the child sees the rabbit's long ears, feels its soft fur and tastes the carrot pieces it eats. Because the child has had direct experience with this animal, later he is better able to assign meaning to a picture or model which represents a rabbit. Simultaneously, concepts of familiar objects are enhanced by representations which cast them in a novel light. For example, pictures depicting a variety of breeds of rabbit enable the child to broaden his concept of rabbit and to better generalize to still newer variations. Also through such pictorial representations, the child can vicariously participate in and examine objects and events ordinarily remote from his environment, such as for example a stampeding herd of elephants. Some of the media commonly used to enhance the conceptual and language development of the child are illustrated books, rhymes, songs, wall and flannel board pictures, role playing materials and games, miniatures and audio-visually presented stories.

At all stages of development the Center Early Learning Program staff members converse a great deal with each child. Furthermore, they consistently reward verbal behavior on the part of children and strive to elicit extended verbalization in the children's descriptions, queries and responses. Consequently, the children are provided active language models and receive constant encouragement in their attempts to expand their verbal abilities.

In order to maximize the child's language learning during the earliest phases of speech, ongoing testing is done to attain an up-to-date profile of the child's development in this area. In the testing, the child is presented pairs of common objects from a list of words ordered by difficulty

into five levels, each level containing approximately twenty-five (25) words. This list has been generated on the basis of the performance of children from previous years. The greater the number of children able to recognize an object, the earlier the placement of the object on the word list. The child is presented pairs of objects in order of their appearance on the list. At the level where the child fails to pick up or point successfully three times to four consecutive objects, it is assumed that these and the following objects on the list are things which have names he will not recognize.

Plans are then made to include these objects in the child's school environment and to give the child as much experience with them as possible. Special focus is placed on giving the child the opportunity to manipulate and hear the names of those objects on the list at the point where he began to have difficulty with name recognition. In addition, the child is provided experiences of seeing the objects whose names are to be learned in picture form through picture books, picture files and audio-visual media.

When the child is retested on those words which formerly he did not relate to appropriate objects, revised language goals are set for him. If he is still experiencing difficulty with the same level, new activities seeking to teach the same learning objective are planned. If the child has mastered the names for those objects which formerly he did not recognize, he is then tested until a new level of difficulty is determined. It cannot be assumed that the child will automatically move only one level forward on completion of a previous level. Often, because the environment provides experiences with many objects, a child will complete and surpass his learning objectives prior to being retested. When a new level is

established, the child's activities are again prescribed to provide experience with the new words to be learned. It should be pointed out that after the first five words on the list, testing is done through pictures rather than actual objects. Both convenience and the differing appeal of various objects make this transition necessary.

The use by the child of verbs, prepositions and adjectives is systematically encouraged after completion of the fifth level of the common object list. For example, participation in active games lays a foundation for the child's use of verbs and prepositions. Having himself performed the actions which certain verbs suggest or placed himself in positions described by certain prepositions, he is better able to recognize and name the same actions or positions when he sees others replicating them. Later, when shown pictures which stop familiar actions or which show objects in various spatial relationships to one another, the child is encouraged to define the situation with the appropriate verb or preposition.

The child's earlier experiences in perceptual discrimination are especially useful in developing his vocabulary of descriptive words or adjectives. Having matched, for example, on the basis of size, he quickly acquires the words "big" and "little" as verbal symbols with which to communicate his perceptions.

Reading Activities

When a child has mastered essential prerequisite perception, perceptual-motor and conceptual-language skills, he is presented instructions in the higher order cognitive task of reading. Through the use of associative shifting he learns to correctly match a word and its

picture. In the first step of learning the word "baby," for example, he is to match the model word card with the like word card from among three choices. The two words which say "baby" vary in the dimensions of size and color from the two incorrect choices. Therefore, in the initial stages of learning to read the word, discriminations are made on the basis of size and color as well as configuration. These extra discriminating factors provide assistance for the child which enables him to avoid failure with the task. Consequently, when he is later asked to discriminate among words on the basis of fewer differences, his previous successful experience gives him the confidence to try the more difficult task.

After the child's ability to perform the gross matching task has increased, the color clue is eliminated and he must discriminate between words on the basis of size and configuration differences. Finally, all response choices have a common color and size. At this point, matching between the stimulus word and the identical response word is done purely on the basis of configurational similarities.

At the same time the child is successfully discriminating between words on the basis of configurational cues, he is also taught to associate the word with a picture representing the same concept. To help the child master the picture-word association task, he is first given a large sized stimulus and asked to name the word shown. A correct response is reinforced by the projection of the corresponding picture. Smaller projections of the stimulus word are later presented after the child has learned to associate the larger word with the picture. This is done in order to shift the child's dependency for visual recognition from parts of the stimulus word or from any of its constituent letters to recognition

of the configuration of the word as a whole.

As each successive word is learned, new words are presented to the children in the same manner. The learning of each word is reinforced and motivated by a variety of accompanying activities. For example, while mastering the word "baby," the child might: be shown a film involving babies; be encouraged to place the word card for baby into a pocket under a picture of a baby; learn songs and play games featuring the word "baby"; be read books discussing babies; or look for pictures of babies in magazines.

Math Activities

The children engage in math learning experiences in both individual instruction and small group activities. A variety of materials are incorporated into a hierarchical sequence of games and puzzles which challenge the child at his own level of learning. Audio-visual presentations, developed by the Center Early Learning Program staff especially for use with the children in math instruction, form a significant part of the curriculum. Songs, poems, and stories are also used to support math learning, and teachers continually make use of opportunities in free play situations to point out or review mathematical concepts.

Formal math instruction is commenced by providing the child opportunities to develop the concept of one-to-one correspondence through guided experiences with manipulative materials. Through direct contact with sets of objects, he is taught to recognize equal and unequal sets of one to five in number. After having mastered the ability to identify sets as being quantitatively equal or unequal, he learns to name, by number, sets of from one to five objects and later to recognize the name and numerals representing

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sets from one to five. At this level of development, the spiraling curriculum again deals with equalities and inequalities. Using the child's previously acquired knowledge of sets from one to five, experiences provided at this stage teach the child to correctly employ, between sets, the mathematical signs for "equal," "greater than," and "lesser than." Learning to use these signs between numerals is then developed next.

The addition of sets with sums of five or less is the first learning of mathematical operations experienced by the child. When addition skills based on manipulation of sets have been developed, the child receives instruction in the addition of numerals. At this point, he also develops recall of number facts. This memorization process is aided by his having previously mastered the meaning of the addition equations through set manipulation. In the same fashion, subtraction is introduced using sets from one to five. Mastery of subtraction of sets is followed by experiences designed to develop ability to subtract numerals and to recall the subtraction equations under study.

Other Activities

During the Level II year, the children are presented opportunities to examine concepts in the areas of science, social studies and health and safety. The curriculum presentations are designed around teaching materials in these areas which stimulate the child's curiosity and interest. Based on his responsiveness and his ability to comprehend, certain ideas are developed. Because whatever degree of comprehension the child attains in these lessons is built on his interaction with the materials he manipulates, his ideas are better defined and his recall is more complete than

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likely would be the case if his understanding of such phenomena were derived from verbal explanations alone. For example, in one of the health and safety lesson activities on getting dressed, flannel cut-outs representing warm, cold, and rainy weather wearing apparel and illustrations depicting these kinds of weather are presented with a cardboard figure of a child. Through a conversational process while clothing the figure and placing it on the appropriate weather illustration, the children come to understand the reasons why we wear clothing and how different kinds of clothing meet our needs in various sorts of weather. Illustrative of the science lessons is the activity designed to develop the children's concepts of how colors combine. In this lesson, solutions of water containing various colors of food dyes are mixed together. Through this process, a child develops an awareness that each time two certain colored solutions are mixed in certain proportions, a constant third color is produced.

Art and music activities, while often pursued as a means of reinforcing other curriculum goals, are also regularly undertaken as worthwhile experiences in and of themselves. Among the art materials available are crayons, paints, clay, paper of many colors and textures, chalk, dyes, scissors, paste, glue, tape, fabric, pipe cleaners and assorted odds and ends. The child is entirely process-oriented in his initial use of these materials. Consequently he is allowed to explore the possibilities of each medium, alone and in combination with others, through numerous different kinds of activities.

During this investigative period, the child begins to master control over the materials and concurrently gains awareness of their potential as means for expression. As the child demonstrates interest in creating

representational art work, he is given encouragement. Product models, however, are not provided by adult drawings but rather by calling the child's attention to shapes in his environment like those he wishes to represent. This is done in order to avoid the child's being discouraged by making unfavorable comparisons between his work and that of his teachers.

Rhythm and music experience include singing songs, acting out finger plays, listening to or singing with live and recorded music, using rhythm instruments and marching, dancing and moving to the beat of musical accompaniment. Pursued as group activities, these opportunities to participate in musical events foster the child's emerging sense of rhythm and equip him with a powerful means for self-expression as well as personal enjoyment.

Physical education is also provided for the children. Free play with gym and outdoor play equipment together with opportunities for individualized swimming instruction form the core of the child's physical education program. Among the equipment available for use with the children is a wide assortment of balls, hoops, ladders, mats, trampolines, and a variety of floats for use in the swimming pool. Through the utilization of these materials, the child increases his strength and his ability to move in and control his physical environment. As in any area of attainment, when the child develops and recognizes these abilities in himself, his confidence in himself and his feelings of self-worth are enhanced. Mastery of physical skills, in addition to assisting the sound development of the child's body and self-concept, also provides excellent opportunities for learning language and discovering the value of cooperative play. For example, as a child develops proficiency in throwing and catching a

ball, he also learns verbal labels for these actions. In addition, he discovers that sharing the ball with another child in a game of catch does not reduce his enjoyment of the activity but instead increases it.

EVALUATION

As an aid to evaluation of the Center Early Learning Program, demographic data are collected on all participating children prior to their enrollment. This information is combined with the results of parent interviews and standardized test scores in order to gain a comprehensive perspective on the effectiveness of the program. It is attempted in this section to present such an evaluative perspective based on the results of the first five full years of program operation.

Demographic Information

The information collected on demographic characteristics is shown as a composite profile for children at the time of their entrance into the Center Early Learning Program between the 1969-70 and 1973-74 academic years, inclusive. It represents only those children who were officially enrolled in the experimental part of the program, though from time to time unofficial non-qualifying enrollments had been permitted.

Over the five-year period for which these data have been assembled, the age requirements of beginning children have been systematically modified to secure a progressively younger sample. Thus, while the age specifications for the 1973-74 sample (mean = 15.1 months; range = 11-19 months) and the 1972-73 sample (mean = 17.1 months; range = 11-21 months) were substantially alike, similar specifications for earlier years produced means as high as 22 months and ranges as large as 14-27 months. The ethnic and socioeconomic compositions of the samples have also changed over time, progressing from earlier homogeneity to later heterogeneity with respect to both of these variables.

It is with these understandings that the following data have been compiled and are here presented in the table below.

Five-Year Demographic Sample Characteristics

(Center Early Learning Program)

	Low Income	Middle Income
Sample Size:		
Total Number Children	84	20
Number Boys	39 (46%)	13 (65%)
Number Girls	45 (54%)	7 (35%)
Family Composition:		
Both Parents	30 (36%)	18 (90%)
Mother Only	48 (57%)	2 (10%)
Father Only	1 (1%)	0 (0%)
Guardian	5 (6%)	0 (0%)
Mean Age of Mother	22	26
Range in Age of Mother	15-41	20-37
Mean Age of Father	25	30
Range in Age of Father	16-40	21-48
Mean Number of Siblings	1.7	.69
Range in Number of Siblings	0-10	0-5
Mean Number of Persons in Household	6.2	3.5
Range in Number of Persons in Household	2-17	2-5
Family Income:		
Mean Income	$4,471	$11,208
Receiving Public Assistance	38 (46%)	0 (0%)

Parent Assessment

Parent evaluations of the program are obtained bi-annually in January and June. Every effort is made to interview both parents if possible. In order to encourage comfortable and open expression by the parents, the evaluations are sought during a home visit made by a staff member already acquainted with the family. Because they are home based, evaluations are taken even from parents whose transportation difficulties and busy schedules

would make attending a center-based meeting impossible. Home-based meetings have an additional advantage in often including extended family members, neighbors, and friends. Those staff members involved in gathering parental evaluations remark that the interaction of others in the evaluation helps parents recall information pertinent to the questions being asked. Also, these persons occasionally have insights of their own which, while noted separately from parental responses, can be valuable.

In the evaluation, the staff members use predesigned questions in a fixed order to seek information on changes the parents may have observed in the child which they believe are attributable to program participation. The interviewer also elicits parental opinions, both negative and positive, regarding the program and asks for any suggestions the family may have to improve the child's learning experiences. The following are typical replies to the evaluation questions:

> "Jimmy is tremendous. He can talk better. He can play better with the kids. He learned songs. He just learned everything."
>
> "Jennifer uses whole sentences. She talks very nice for a three-year-old. She uses real good English. She amazes me everyday."
>
> "Andrea can do everything and anything. She can read words. She can count to twenty. She talks more. She can hold long conversations. She says long sentences."
>
> "Harry benefitted not only educationally but he can play with the kids better. Plus he knows his colors. He can say more words than most kids his age. He can express himself more than my two other kids at his age. I really liked it (the program) and he liked it. When he knows he's going to school, he's sitting on the step waiting."

While the home visits made to obtain parental evaluation of the program focus chiefly on the family's response to the interviewer's questions, they also function as an opportunity for the family and program staff to exchange other information. An ordinary evaluation visit might, for example, provide

the parents a chance to inquire about the child's current achievement. Conversely, the interviewer might learn of a change in the family which influences the child or of a neighboring family with an interest in seeing their infant enrolled in the program.

Notes, phone calls and visits are used between evaluations to maintain communication. Both center staff and parents initiate conferences or observational visits when needed. In addition, the car aides who accompany the children to and from the center frequently carry messages back and forth between home and school.

Test Results

An extensive battery of developmental measures is administered to all children regularly on a pre- and posttest basis during the Infant and Toddler Levels of the program. Although the composition of this battery has changed over the years, composite test results for the period of program operation between the 1969-70 and 1972-73 academic years have been compiled and are presented in the tables below. Since at the time of this report, no posttest data were available for the 1973-74 program year, only the four-year period through the 1972-73 session has been included.

Data for each of the two levels of the program, as presented in the tables that follow, include all participating children for whom completed pre- and posttest records were available. The number of children with complete data records for each test measure varies according to the level at which it is given and the frequency of administration over the years. Since the program is currently ongoing, a greater number of children have completed the first level than the second thereby making available a greater

number of complete test records for the Infant Level. Moreover, certain changes in the composition of the test battery from year to year have resulted in unequal numbers of complete test records available for the composite analysis even within each of the program levels. In addition, since the data presented in the tables represents a composite of four years of operation of the Center Early Learning Program as a whole, the Infant Level results reflect data on participating children accumulated over a four-year period, while the Toddler Level reflects only a three-year period of accumulation due to the sequential nature of the program. No attendance criteria were established for inclusion or exclusion of children. Therefore, the data presented should reflect, more accurately, the actual results of program application rather than the results which might be attained under ideal conditions in which only high attenders are retained in the data base used for analysis purposes.

The following test instruments were administered in one or more years of the program:

1. The Bayley Scales of Infant Development (BSID)
2. The Stanford Binet Intelligence Test (SBIT)
3. The Peabody Picture Vocabulary Test (PPVT)
4. The Verbal Language Development Scale (VLDS)
5. The Vineland Social Maturity Scale (VSMS)
6. The Preschool Assessment of Reading (PAR)
7. The Preschool Assessment of Math (PAM)

The BSID and SBIT were used in combination to provide a measure of intellectual development over the course of the program. The PPVT and VLDS were used to assess effects of the program upon the language development of the participating children. In the social development area, the VSMS was

used to measure program induced gains. The PAR was a specially constructed sixty-three item instrument designed to assess reading achievement and contained items measuring word recognition and sentence comprehension. The PAM was another specially constructed thirty-three item instrument, designed to assess understanding of basic mathematical concepts such as quantitative relationships and one-to-one correspondence. Also included were task items relating to such skills as counting and numeral identification. For each measurement instrument, program effects were analyzed via correlated t-tests performed in comparing the respective pretest and posttest means.

The results tables presented on the following pages show for each test measure: the total number of children taking both pre- and posttests (N); the mean pretest score (Pretest); the mean posttest score (Posttest); the mean gain in score from pre- to posttest (Gain); the correlated t-ratio resulting from analysis of pretest-posttest mean differences (t); and the level of statistical significance which the t-ratio exceeds (p).

As can be seen in the results tables, the children participating in the Center Early Learning Program gained significantly in intellectual, language and social development during both the infant and toddler program periods. Even when maturation is taken into account, it is apparent that the rate of development of these children has been greatly accelerated as a result of the program. This can be appreciated when either Gains or Posttest mean for each of the Test Measures is compared with the similar Gain or Posttest Mean under the Age category. Significant gains were also evident in the areas of reading and math achievement during the second or toddler year of instruction, while no test measures for these areas were employed at the Infant Level.

Infant Level - Center Early Learning Program

Four-Year Composite Test Results

Test Measure	N	Pretest	Posttest	Gain	t	p <
Bayley Scales of Infant Development/ Stanford Binet Intelligence Test (MA)..	61	16.13	30.67	14.54	23.03	.001
Bayley Scales of Infant Development/ Stanford Binet Intelligence Test (IQ)..	61	81	110	29	12.15	.001
Peabody Picture Vocabulary Test (RS)....	54	3.43	13.74	10.31	16.60	.001
Verbal Lanugage Development Scale (RS)..	61	8.15	17.15	9.00	20.76	.001
Vineland Social Maturity Scale (SA).....	69	18.60	29.04	10.44	15.88	.001
Age.....	84	20.99	28.50	7.51	-	-

IQ = Intelligence Quotient
MA = Mental Age in Months
RS = Raw Score
SA = Social Age in Months

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Toddler Level - Center Early Learning Program

Four-Year Composite Test Results

Test Measure	N	Pretest	Posttest	Gain	t	p <
Stanford Binet Intelligence Test (MA)..	37	37.57	49.84	12.27	20.37	.001
Stanford Binet Intelligence Test (IQ)..	37	111	121	10	5.73	.001
Peabody Picture Vocabulary Test (RS)....	45	19.49	32.33	12.84	11.31	.001
Verbal Language Development Scale (RS)..	38	19.61	28.61	9.00	14.66	.001
Vineland Social Maturity Scale (SA).....	46	32.76	48.72	15.96	14.54	.001
Preschool Assessment of Reading (RS).....	37	0	7.54	7.54	-	-
Preschool Assessment of Math (RS).....	37	8.70	20.41	11.71	5.99	.001
Age.....	54	34.30	41.93	7.63	-	-

IQ = Intelligence Quotient
MA = Mental Age in Months
RS = Raw Score
SA = Social Age in Months

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THE HOME

EARLY LEARNING PROGRAM

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BACKGROUND

The Home Early Learning Program (HELP) undertakes to foster the perceptual skills and, based upon these, the conceptual development of infants and toddlers through the use of a hierarchically structured individualized curriculum taught in the child's home. Materials and activities for use with the children are developed on the theory that competence in sensory discrimination and integration lays a necessary foundation for the child's later conceptual and language learning and his facility in relating new ideas and experiences to previous ones. Consequently an initial stress is placed upon tasks designed to increase the accuracy and breadth of the child's sensory perceptions and discriminations. Later, emphasis shifts to activities which support vocabulary acquisition, development of concepts and skill in relating these concepts to one another. Two forty-minute visits are made each week by the child's teacher during the months from October through April. For each visit the child and teacher work with a selection of teaching materials to assist the child in attaining specific learning objectives.

HELP is a component of the PRIDE (Pennsylvania Research in Infant Development and Education) Project centered at West Chester State College in West Chester, Pennsylvania. Each year the program serves approximately fifty children from the local community. Support for the program is obtained principally from the Pennsylvania State Department of Education and West Chester State College.

Enrollment Policy

The enrolled children participate in either the Level I or the

Level II group. The Level I children range in age from eleven to twenty-one months. Level II children, all of whom have completed a previous year as Level I group members, range from twenty-four to thirty-four months in age. Both Level I and Level II groups consist of approximately twenty-five children each.

Children begin HELP instruction only at the start of the Level I year to assure that all participate in a consistent experience. Each year during the summer a new Level I group is assembled. Every effort is made to enroll a group of children from diverse social and ethnic backgrounds. Mailings to families of children born during the specified months, publicity in local media, presentations by HELP staff at meetings of community organizations and word of mouth information widely circulated in the neighborhoods create a high degree of awareness of the Project's operation and objectives among the population served. Families interested in enrolling a child in HELP are identified through self-referrals, names provided by parents of already participating children and agency referrals.

If the child is of the appropriate age for membership in the Level I group and the family resides within the limits of the local school district, an interview is arranged between the parents and a HELP staff member. At this meeting the home tutoring program is discussed in detail and questions of the parents regarding HELP are answered. If the parents wish, they may then make an application to the program for their child. Through the information elicited in the application, a detailed picture emerges of the child's developmental history and present behavior. The HELP staff member also describes the household and the familial interaction she observes and any special situations that are not noted on the application form itself.

When the summer recruitment period has concluded, the number of applications usually exceeds greatly the number of available positions. Using all the applications taken, the places in the group are filled through a random selection process.

Program Resources

The HELP staff consists of a supervising teacher and approximately thirty individual HELP teachers and drivers. In initiating the program the role of the supervising teacher consists of matching and scheduling assistant teachers and participating children, arranging transportation for these teachers to and from the children's homes, and training them to work successfully in a home setting. Once the program is underway, she serves as a resource person to whom other teachers may turn for assistance and supervises the day-to-day operation of the program.

The assistant teachers for HELP are all undergraduate students at West Chester State College employed through the college work-study program. In most cases these students are education or psychology majors who perceive their work as a valuable learning experience as well as a source of income. Training for these assistants is undertaken through a variety of methods. A handbook detailing the role of undergraduate assistants to the Project is provided for every such teacher. In addition, she is given a curriculum manual for home instruction of both Level I and Level II children which specifies teaching goals and cites means for carrying them out. These handbooks guide the teacher in undertaking her tutoring responsibilities. The teachers also develop skill in working with young children through supervised contact with the groups

of children in the center-based component of the PRIDE Project. Direct preparation for beginning the home instruction of a particular child is handled in a meeting between the HELP teacher and the supervising teacher. At this time the HELP teacher is given an overview of the child's developmental history and present achievement. Any unusual circumstances that would affect the child-teacher relationship are explained. Records detailing the child's progress with prior teachers are made available in the cases of children who have already started the program. The HELP teacher and the supervising teacher discuss appropriate learning objectives for the child. Methods and materials for effecting these objectives are also explored. An undergraduate who has had no previous experience in home tutoring is accompanied on her first visits to the child by an experienced HELP teacher.

Instructional Format

After a child has been accepted for the Home Early Learning Program, the parents are provided with a Guide for Parents (see below) which suggests ways in which they can create a favorable atmosphere for their child's learning sessions. The teacher beginning instruction of a Level I infant or an older child is reminded to first seek to establish rapport with the child and his family. The teacher is advised to approach the child gently and allow time for the child to become accustomed to her. Often the mother's support is sought and she is most helpful in encouraging the child to accept the teacher. During the first sessions the rountine for later meetings is established. The child and teacher locate themselves in a quiet part of the house. The teacher brings a variety of materials for use with the child. The child uses the materials one at a time working toward specific learning objectives.

After the conclusion of the visit to the child, the teacher fills in a Home Program Report sheet (see below) on which she specifies each learning objective toward which the child worked in the session, the materials used and the outcomes of the activities. She also notes any special achievement or difficulty which occurred during the meeting. The report sheets are turned in to the supervising teacher. She and the visiting teacher then use the report sheet to plan the next goals for the child.

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Guide for Parents: Home Early Learning Program

(Pennsylvania Research in Infant Development and Education Project)

Thank you for cooperating with these requests. Because you are willing to follow these guidelines, your child's tutor will be able to concentrate all her time on your child's education.

1. Know the days and time when the tutor will visit. Try to be at home to keep these appointments.
2. If your child will not be available for the tutor, please phone and let us know.
3. If possible, arrange an area in your living room, kitchen or bedroom where your child and the tutor can work without distraction from TV, radio or other children.
4. Your child may misbehave with the tutor. To avoid this, tell the tutor in the beginning what your rules are. When and if your child misbehaves, let the tutor try to control him. Your child is probably trying to see if the tutor will enforce your rules. The tutor should be able to make your child understand that the rules still hold.
5. Don't worry if your child is restless or loses interest quickly in a game. One of the tutor's jobs is to help your child learn to concentrate on the games for longer and longer periods of time.
6. When your child has mastered a new skill, give him praise to show that you are proud. If you are pleased with the tutor's work, tell her also. Your interest will please both your child and the tutor and will make it possible for them to work together even better.

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7. Do not leave the house while the tutor is there. The tutor cannot babysit. The tutor must be ready to return to her classes at the college as soon as the car comes.
8. Be sure we have your current phone number at school. If you have no phone, please let us have the number of a nearby neighbor who would not mind taking a message for you.
9. If the tutor cannot visit, we will call you at the phone number you have given us. If the whole Early Childhood Program is canceled, the school closing will be announced on radio station WCOJ. Our code name is: Project PRIDE, West Chester State College.
10. Our phone numbers are: 436-2529, 436-2835, or 436-2886. Our secretary will answer and tell you that you have the Office of Research. If we are not free to come to the phone, she will take your message, your name and number. We will return your call as soon as possible.
11. Phone, visit or send a note if you have any problem or question. We will be very happy to hear from you.

Home Program Report

The PRIDE Project

Child's Name Ryan

Teacher's Name Cathie

Date October 2

Objective	Material	Successful	Tried	Unsuccessful	Verbalization Yes	Verbalization No
draw on paper	crayons		X	not much interest	X	
look at pictures	picture book		X	no interest	X	
throw it	football	X			X	
thread it and unthread it	blocks and thread	he picked up the skill right away			X	
watch my movements	itsy-bitsy spider pat-a-cake hand game	X			X	

Comments: Ryan is verbalizing a lot now, and is forming words. He showed the most interest in the blocks and thread.

Home Program Report

The PRIDE Project

Child's Name Martin

Teacher's Name Brenda

Date December 10

Objective	Material	Successful	Tried	Unsuccessful	Verbalization Yes	Verbalization No
color match shapes	sorting box	X			X	
name color put-together	puzzle: 3 piece cat	X			X	
name color put-together	puzzle: 3 piece dog	X			X	
name color put-together	puzzle: 4 piece squirrel	X			X	
name color put-together	puzzle: 7 piece squirrel	X			X	
naming listening	books	X			X	

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Home Program Report

The PRIDE Project

Child's Name Yvonne

Teacher's Name Liz

Date February 6

Objective	Material	Successful	Tried	Unsuccessful	Verbalization Yes	Verbalization No
take apart and put together	Kittie in keg	X			X	
put together	Giraffe puzzle		X		X	
match them	Shape lotto	X			X	
match them	Fish lotto		X		X	
building something and stack inside one another	Nesting cubes	X			X	

Comments: Couldn't name the colors associated with objects. Named some shapes - knew triangle, and learned circle but couldn't remember square.

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PROGRAM CURRICULUM

Learning objectives for HELP children are subsumed under five categories: sensory and perceptual, conceptual and language development, mathematics, science, and social studies. The focus in the Level I year is largely on the sensory, perceptual and language areas and in the Level II year on language, mathematics and general conceptual development. Because the children represent a diversity of ages and aptitudes, no two work toward a particular learning objective at the same rate nor use precisely the same activities and materials. Using the HELP curriculum guide as a source, the teacher works through developmental sequences with the child in accordance with his needs and prior achievements.

Sensory and Perceptual Activities

Development of visual, tactile, and auditory perception abilities and integration skills forms the core of the sensory learning objectives. The child begins by increasing his capacity to match objects on the basis of many perceptions. For example, the child is taught to match one ball to a second identical ball as opposed to a small doll when both are held by the teacher. In this task he employs many tactile and visual stimuli to aid him in matching the pair. Later, after intervening learning steps have sharpened the child's perceptual skills, he makes discriminations between things using only a few stimulus differences, for example, papers which are cut in the same shape but are different in size and color. Eventually the child learns to distinguish between similar objects on the basis of a single stimulus dimension. For example, in a tactile discrimination game, the child holds a tennis ball in one hand and with his

other hand tries to find a match for it in a paper bag. The choices in the bag include another tennis ball and rubber and wooden balls, all three of the same size.

Through the sensory integration activities the child learns how to draw accurate impressions from his experience and to relate these impressions to appropriate objects. For instance, he is taught to recognize the sound of two metal spoons banged together. Later when he hears this sound, he can distinguish the object which makes the noise given pictures of a spoon, a block and a plastic cup. The child demonstrates that he has incorporated the metallic clatter and the characteristic shape into his concept of the spoon and that he can adequately integrate his visual and auditory perceptions of this object.

The wide assortment of toys and activities employed to support the child's sensory learning is also an important element. To assure a supply of objects which offer a range of teaching potential and which are also easily portable, a large selection of both commercially made toys and materials designed and made by project staff is available.

Planned use of stimulating toys serves both to foster a developmental learning pattern and to keep motivation high in teaching each particular perceptual skill. The materials and the sequence for their use in the area of shape perception are illustrative of the role teaching aids play in the curriculum. Among the toys incorporated as learning devices in this area are puzzle form boards, shape sorting boxes, chip stacking games, shape stencils for tracing, cut-ups of paper and styrofoam and shape matching letters. The child first learns to master the simplest types of shape discrimination problems through work on toys which focus his senses on configuration properties of objects and which also are so simple to operate

that he enjoys success with them. For example, he learns to drop cylindrical blocks into a sorting box with only one circular hole. Later the child is challenged to work on a sorting box with two holes, each of a different shape. Using two sets of blocks, one for each hole, the child discovers which blocks fit through which holes.

Through this activity, and others employing different toys, he experiences shapes through his senses of sight and touch. As his skill in early shape matching tasks increases, the child works with materials which teach him to recognize shape similarities by either visual or tactile perceptions alone. For example, using both hands at once he matches a square wood chip he finds in one opaque bag with another identical chip in a second bag which also contains a round chip. Finally, combinations of materials which stress either visual or tactile perceptions are arranged to enable the child to relate his separate sense perceptions. For example, using a line drawing of a shape as a stimulus, the child reaches into a tactile box to find and pull out a matching shape among the assorted blocks it contains. Toys and games for all the other perceptual skill curriculum areas are purchased or made and specified for use in meeting particular curriculum needs.

Many activities within the perceptual area of the program serve concomitantly as aids to increase perceptual motor abilities. For example, besides encouraging the child to perceive size differences, a puzzle featuring five apples of various sizes also helps him learn necessary coordination skills. Additional tasks focusing especially on increasing achievement with such capacities as eye-hand coordination and small muscle control are conducted with the child in a hierarchical sequence. Simple manipulations involving large stable materials are used for the first level of sensory-motor development tasks. Typical activities at this stage are: threading a block containing

many wide holes with a piece of cord on a four-inch plastic lead; fitting disks with holes in their centers onto a pole; scribbling with crayons; and stacking or nesting square plywood boxes with sides ranging from two to six inches.

Tasks requiring finer motor coordination are presented when the child has mastered the most basic problems. At this stage the child builds on some of the skills he had already acquired through such activities as threading two-inch beads onto a plastic covered wire or brush painting. He also begins to work in novel ways when he undertakes such challenges as placing pegs in a peg board, tracing the outline of large shapes, twisting large nuts on and off a plastic pole and molding plasticine. Children usually begin to master manipulation skills at this degree of difficulty toward the end of their Level I year and complete them at the beginning of Level II.

The third group of sensory-motor tasks with which the child works demands mastery of still finer motor skills, more agile small muscle control and more precise hand-eye coordination. Children develop such capacities as cutting paper with scissors, lacing the outline of simple pictures with yarn, drawing lines and circles, manipulating various fasteners and latches and stringing one-inch beads onto a shoe lace. On completion of the third stage of the perceptual motor curriculum, the child has acquired much of the small motor control and flexibility necessary for such later developed skills as handwriting.

Conceptual and Language Activities

Building upon the observations the child makes based on his perceptual and perceptual-motor experiences, the conceptual and language portion of

the curriculum seeks to enable him to identify and relate the impressions he gathers about himself and the world around him. Activities in this area initially focus upon the child. He learns to point to parts of his body when his teacher names them. His self concept is enlarged through his new ability to identify features which were previously nameless perceptions. In addition, both the attention he receives and his own sense of accomplishment in this, as in all his activities, serve to enhance the view he has of himself.

Next, the child is taught words which label common objects or, through pictures, he learns to pick out appropriate illustrations when his teacher names the objects shown. Picture sets and books are used extensively to provide the child opportunities to examine common objects depicted in a variety of forms and situations. The child also learns verbs which express activities in which he participates or sees done. Games linking a motion with its name as well as pictures showing a person or object performing a particular action are used as aids in teaching the child the ability to identify common movements.

When the child can point out familiar things and actions in his environment, his attention is called to property names. Because he has previously sorted and matched objects by size, shape, color and texture in doing perceptual development tasks, his learning to identify these properties is greatly facilitated. Size names are taught to the child in a way that is typical of the techniques used to teach names for the other physical properties. First, the child examines two objects, for example, blocks which are alike in every respect but size. The child is shown a third block which is as large as the larger of his two blocks. The teacher tells him that the block she is holding is a big block and asks him to show her his

big block. When the child can successfully carry out her request, she sets her block out of view again and asks the child to hold up his big block. In the same way the child learns to pick out and hold up the smaller block when his teacher asks for the little block.

Later the child is alternately requested to select the big or little object. When the child has mastered naming size differences of objects, he can both see and touch, he next learns to identify sizes using only the perceptions of a single sense. For example, he is taught to identify big and little sized objects in pictures and thus develops the ability to judge size on his visual perceptions alone. He also works on a variety of tasks which enable him to find big or little objects solely on the basis of his tactile impressions.

After the child achieves a comprehensive understanding of two sizes, he is introduced to the concept of middle sizedness. Developing his grasp of this idea in the same sequential way in which he was taught to identify big and little, the child learns to label the observation of size differences he has made in prior experiences. A child who has mastered identification of three sizes next learns comparative forms such as big, bigger, biggest and expressions for different types of size differences such as tall and short or wide and narrow.

A concerted effort is made to teach the children the meaning and use of prepositions. This instruction begins in asking the child to imitate placing a toy in the same spacial relationship to an object as that just demonstrated by his teacher. This relationship is labeled by the teacher using the appropriate prepositional expression. Later the child learns to place his toy accurately when only a verbal direction is provided. Illustrations depicting objects in varying spacial relationships are employed

to help the child develop a more refined understanding of the meaning of prepositions. A variety of games reinforcing the child's concept of prepositions are played with the pictures. For example, the child might group all the pictures which show one object beside another in one pile and all which show an object on top of another in a second pile.

After the child has learned the names for common objects, actions and descriptive words, usually early in the Level II year, he commences the portion of the language curriculum designed to help him broaden and correlate his concepts. While prior to this time he has received extensive exposure to objects, books, picture sets, poems, songs, arts and crafts, he now uses these materials in a new way. They are employed as the basis for learning skills in classification, association, sequencing, identification of opposites and role playing. In addition the child's self-concept is enhanced through games and materials which help him to recognize his own growth and potential.

The activities engaged in for teaching sequencing are typical of those used in other areas of concept development. Initially the child and teacher complete some familiar task such as putting on the child's socks and shoes. While doing this, the teacher describes the sequence for the child saying, for example, "First we put on your socks. Next we put on your shoes. Last, we tie your shoe laces." The child is then shown pictures which illustrate these three events and as the teacher again relates the sequence, she lines the pictures up in chronological order. Finally the child learns to order the story when his teacher asks what happened first, what happened next, what happened last. Many sequential situations, such as household routines, fairy tales, rhymes, and growth patterns, are examined by the child.

As his skill in ordering the chronology of short stories increases, he is challenged by longer and more complex ones. His learning in this area is supplemented by his teacher when she calls his attention to the sequence of events of the various activities they undertake. For example, in making a finger paint picture or in learning a new song, the child hears his teacher describe the order in which they deal with the various components of the task.

Other conceptual skills are presented to the child in much the same way that he learns to observe and describe sequencing. Lessons stressing mastery of specific learning goals develop the child's understanding of the various concepts. Informal reinforcement of the skills is undertaken where appropriate through the wide variety of other activities in which the child participates.

Math Activities

Beginning math concepts are introduced in Level II by means of tasks and materials designed to stimulate the child's understanding through guided experience in the manipulation of sets of objects. Teaching aids for the math curriculum include many different types of toys stressing number concepts and assorted sets of counting objects. Through use of these materials in steps requiring progressively more competence, the child first learns to identify sets which have the same number of members and sets with different numbers. Having mastered this skill, the child then learns to compare two sets of up to five members each and to point out the set with more or the set with less.

When the child has a firm grasp of the pre-number portion of the math curriculum, he is introduced to numeral identification of sets.

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First he is taught to recognize sets from one to five. Next he learns to assemble sets of from one to five numbers. Finally he masters matching written numerals to sets of the appropriate number.

Other Activities

The social studies and science curricula provide the child an opportunity to explore facets of his social and physical environment at an early age. Each general concept in the curricula is developed through a series of lessons. First hand experiences are used as the basis for the learning whenever practicable. Visual aids supplement, or in the case of some lessons replace, direct interaction with people or materials. Social studies and science are not begun until the child is in Level II.

The presentations which introduce science concepts provide an opportunity for the child first to manipulate materials and observe a scientific phenomenon and second to develop, through discussion with his teacher, a capacity to describe what he has seen. Learning objectives for the science curriculum seek to teach the child explanations which he can understand. Among the topics into which the child delves are magnifying glasses, air and wind, the states of water, magnets, volume relationships and light. The activities dealing with magnets serve as an example of the manner in which the other science concepts are examined. Using a bar magnet and various objects, some of which are attracted to the magnet and some of which are not, the child sorts the objects into appropriate piles. The teacher and child then talk about the materials in each pile and note that only certain metal objects are pulled by the magnet. In another lesson a horseshoe magnet is used instead of a bar magnet. The child is encouraged to note that the shape of the magnet does not alter its power. A

third lesson enables the child to discover the attraction and repulsion aspects of magnetic poles as he works with two magnets.

Health and safety concepts and awareness of and knowledge of the roles of community helpers are the main components of the social studies curriculum. Cleanliness, good eating habits, safety in the home and at play, understanding the jobs of doctors, nurses, dentists, policemen, firemen, and teachers are some of the topics undertaken. In the lessons dealing with safety at play, pictures, books, and role playing props are used to develop the child's realization of enjoyable games to play alone or with others. Also stressed are: dangerous play situations, the need to be cautious of strangers, or of wandering too far from home. The child examines and discusses the materials with his teacher. Using examples from the child's own experience whenever possible, the teacher helps him better understand the difference between play which is enjoyable and safe and play which potentially can hurt himself or another child. Using materials appropriate to each theme, the other general concepts are also taught using child-teacher dialogue and play activities.

EVALUATION

Certain data with regard to demographic characteristics of children enrolling in the Home Early Learning Program are routinely collected each year prior to their actual entrance into the program. In addition, evaluative information on perceived program effectiveness is solicited from parents of these children at regular intervals after the start of program operations. This information, when combined with the results of standardized tests administered to the participating children, yields a fairly comprehensive indication of the nature and extent of program effects.

Demographic Information

Information on demographic characteristics of children participating in the program over the past five years, 1969-70 through 1973-74 inclusive, is shown in composite table form below. The table containing these composite characteristics includes only those children officially enrolled as part of the experimental sample. Furthermore, it should be understood that these data are based on a sample which has been selected from a systematically younger subject pool over the years, and which has become less and less homogeneous through systematic modifications in criteria for selection of these initial pools of subjects available for random assignment each year. For example, although the mean age of the 1973-74 sample was 15.2 months (range = 11-20 months) and 16.7 months (range = 12-21 months) for 1972-73 group, samples from earlier years were characterized by mean ages up to 24.3 months with ranges in age as large as 14-27 months.

It is with this understanding of the changing nature of the composition of the participating children in the program from the earlier to the most recent years that the data given below have been compiled and are here presented.

Five-Year Demographic Sample Characteristics

(Home Early Learning Program)

	Low Income	Middle Income
Sample Size:		
Total Number Children	85	19
Number Boys	41 (48%)	13 (68%)
Number Girls	44 (52%)	6 (32%)
Family Composition:		
Both Parents	36 (42%)	18 (95%)
Mother Only	48 (57%)	1 (5%)
Father Only	0 (0%)	0 (0%)
Guardian	1 (1%)	0 (0%)
Mean Age of Mother	24	28
Range in Age of Mother	16-42	20-36
Mean Age of Father	29	30
Range in Age of Father	17-49	21-42
Mean Number of Siblings	1.6	1.3
Range in Number of Siblings	0-8	0-8
Mean Number of Persons in Household	6.0	4.2
Range in Number of Persons in Household	2-17	3-11
Family Income:		
Mean Income	$4,368	$12,052
Receiving Public Assistance	34 (40%)	0 (0%)

Parent Assessment

Twice each year a staff member of the Home Early Learning Program, other than the child's teacher, visits the family to discuss the child's progress. To encourage relaxed and candid interaction, this evaluation is taken in the family's home and the interviewer is usually an individual

with whom the family is already acquainted. Whenever possible both parents are urged to be present at the inverview. While the main objective of this interview is to seek the parents' assessment of the gains their child has achieved, through participation in the program, the parents and interviewer usually exchange other information as well. During a typical meeting the parents might tell the interviewer of some change in their family situation which influenced the child or of another family who wishes to enroll a child in the program. Often other members of the household, babysitters or visitors, are present during the interview meeting. Their remarks are sometimes very helpful because they are sometimes able to recall pertinent events which the parents may have forgotten or may not have had occasion to observe.

Specific comments are elicited on the parents' reactions to the child's tutor, the scheduling for the home instructional sessions and the content of the instruction. Another portion of the interview asks the parents to describe any changes they may have seen in their child which they think are direct results of his participation in the program. The following are typical of their remarks:

> "Drew counts to 30 and he knows all his colors. He can pick up different things on TV and tell you what they are. He does puzzles - he's up to eight pieces. He buckles his shoes now. His speech is better - he talks a lot better. He seems to sit a little longer than he used to."
>
> "Aaron talks all the time - he learned a lot of new words - he says just about anything and he talks in sentences. Anything he wants he asks for. He plays more and he shares (sometimes). He sings, he can count but he doesn't name his colors. He's so grown-up, completely. He talks better than his older brother."
>
> "Beulah talks more. She knows her words. She doesn't play any better with the other kids though. She did like the idea of a teacher coming to the house. She just learned a lot. She knows colors, all the parts on her body, animals, foods."
>
> "I think it helped Chris quite a bit. It's helped him to co-operate better with people. His concentration has improved,

he can concentrate on things longer. He can recognize colors as far as association. He can count up to seven. He's got a good imagination and he doesn't often use his toys the way he should. He can put simple puzzles together. He really enjoyed himself in the program. His vocabulary has increased a great deal in the last four months. He puts his toys away now."

Test Results

Each year all children participating in both the Infant and Toddler Levels of the Home Early Learning Program are pre- and posttested on a battery of developmental test measures. The constituent tests making up this battery have changed somewhat from year to year, and therefore, the total number of subject scores upon which composite results are based may vary from test to test. Presented in the tables below are composite results for the Infant and Toddler Levels of this program based on test scores accumulated since the first full year of program operation. As posttest data for the 1973-74 sample have not been collected at the time of this report, the results given below reflect a data base consisting of the four-year period from 1969-70 to 1972-73, inclusive.

Data for the Infant and Toddler Levels of the program, as presented in the results tables, include all children with complete pre- and posttest records. No attendance criteria were established for inclusion of any of the scores, and thus the results present a fairly realistic reflection of program effectiveness under less than ideal conditions. The number of children with complete data records for each test measure used in evaluating the program vary across the two program levels and from test to test within each level depending upon for which, and how many, program years each was administered. Also, since the data presented in the tables represents a composite of four years of operation of the Home

Early Learning Program as a whole, the Infant Level results reflect data on participating children accumulated over a four-year period, while the Toddler Level reflects only a three-year period due to the sequential nature of the program.

The following test instruments were administered in one or more years of the program:

1. The Bayley Scales of Infant Development (BSID)
2. The Stanford Binet Intelligence Test (SBIT)
3. The Peabody Picture Vocabulary Test (PPVT)
4. The Verbal Language Development Scale (VLDS)
5. The Vineland Social Maturity Scale (VSMS)
6. The Preschool Assessment of Reading (PAR)
7. The Preschool Assessment of Math (PAM)

The BSID and SBIT were administered in tandem, pretest and posttest respectively, for the Infant Level in order to provide a measure of intellectual development. At the Toddler Level, only the SBIT was used on a pre- and posttest basis as the chronological ages of the children exceeded the test ceiling of the BSID. Language development was assessed by means of the PPVT and VLDS, while in the area of social development, the VSMS was used to measure program effects. The PAR and PAM were also administered as achievement measures. The former was a specially constructed sixty-three item instrument designed to assess word recognition and sentence comprehension, while the latter was a similarly constructed thirty-three item measure designed for assessment of basic math skills. For each test instrument, program effects were analyzed via correlated t-tests performed in comparing the respective pretest and posttest mean scores.

The results tables presented on the pages which follow show for each

test measure: the total number of children with complete pre- and posttest records (N); the mean pretest score (Pretest); the mean posttest score (Posttest); the mean gain in score from pre- to posttest (Gain); the correlated t-ratio (t); and the level of statistical significance which the t-ratio exceeds (p).

As can be seen in the results tables, the children in the Home Early Learning Program gained significantly in intellectual, language, and social development during both the Infant and Toddler Levels as a result of their participation in the program. Even when maturation is taken into account (as reflected in the Age data), it is apparent that the rate of development of these children has been accelerated greatly. Significant gains are also evident for math achievement for the second year of program attendance. As anticipated, no gain was achieved in reading achievement during this second year as no systematic effort to teach reading comprehension or even word recognition was undertaken in this home-based program. (See Program Curriculum section of this report.)

Infant Level - Home Early Learning Program

Four-Year Composite Test Results

Test Measure	N	Pretest	Posttest	Gain	t	p <
Bayley Scales of Infant Development/ Stanford Binet Intelligence Test (MA)..	60	16.05	26.52	10.47	18.44	.001
Bayley Scales of Infant Development/ Stanford Binet Intelligence Test (IQ)..	60	80	95	15	7.36	.001
Peabody Picture Vocabulary Test (RS)....	58	3.53	9.40	5.87	8.90	.001
Verbal Language Development Scale (RS)..	62	8.08	15.06	6.98	12.62	.001
Vineland Social Maturity Scale (SA).....	73	19.32	27.24	7.92	11.31	.001
Age.....	89	21.53	29.01	7.48	-	-

IQ = Intelligence Quotient
MA = Mental Age in Months
RS = Raw Score
SA = Social Age in Months

Toddler Level - Home Early Learning Program

Four-Year Composite Test Results

Test Measure	N	Pretest	Posttest	Gain	t	p <
Stanford Binet Intelligence Test (MA)..	33	34.36	44.52	10.16	14.78	.001
Stanford Binet Intelligence Test (IQ)..	33	101	106	5	2.43	.05
Peabody Picture Vocabulary Test (RS)....	41	15.29	24.24	8.95	7.13	.001
Verbal Language Development Scale (RS)..	32	17.72	25.69	7.97	10.69	.001
Vineland Social Maturity Scale (SA).....	40	29.76	42.96	13.20	9.45	.001
Preschool Assessment of Reading (RS).....	33	0	0	0	-	-
Preschool Assessment of Math (RS).....	33	5.70	15.39	9.69	4.85	.001
Age.....	61	34.94	42.58	7.64	-	-

IQ = Intelligence Quotient
MA = Mental Age in Months
RS = Raw Score
SA = Social Age in Months

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THE COGNITIVELY ORIENTED PREKINDERGARTEN

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BACKGROUND

In recent years, the city of West Chester, Pennsylvania, has been the focus of an influx of low-income Black families from larger urban centers such as nearby Philadelphia, Chester and Wilmington, as well as low-income Puerto Rican families from the neighboring rural farming areas.

The growing number of children from poverty backgrounds in the West Chester Area has created serious educational problems for this moderate-sized urban community located in Pennsylvania's fastest growing county. Since research has shown that children from impoverished families enter school with a learning disadvantage which does not enable them to do well throughout their schooling (e.g. Deutsch, 1965), efforts must be made to dissipate such disadvantage before these children even enter the schools. The Educational Development Center at West Chester, designated as a State Center for Urban and Bilingual Education Studies, has been actively seeking solutions to these problems.

The Educational Development Center and West Chester State College have, over the past several years, been involved in a wide variety of developmental educational programs for children of low-income Black and Puerto Rican families aimed at elevating the educational achievement levels of these children to the point at which they are able to compete adequately within the school system. In response to expressed community needs, a considerable preschool effort was undertaken in the Fall of 1969 with the above types of children in an attempt to prevent the very kinds of educational problems for which remedial programs had become necessary. This effort has come to be known as the Pennsylvania Research

in Infant Development and Education (PRIDE) Project. It was through extensive and long-term contact with community leaders, agencies and parents via the above project that the specific needs relating to the present program were identified.

Program Approach

Although there have been several philosophic and programmatic antecedents of the early intervention approach to educational problems of the disadvantaged (e.g. Bereiter & Englemann, 1966; Bereiter, 1967; Gordon, 1967; and Weikart, 1967), the primary source of rationale in the present Cognitively Oriented Prekindergarten is derived from the Pennsylvania Research in Infant Development and Education Project (Dusewicz, 1970, 1972; Dusewicz and Higgins, 1971, 1972), developed jointly by the Bureau of Research of the Pennsylvania State Department of Education and West Chester State College.

To date a large number of children have participated in the PRIDE Project's Early Learning Program, achieving considerable gains in intellectual, language and social development as a result of the program. The curriculum utilized for this very effective early learning program provided the main thrust for the construction of an extended curriculum currently incorporated in the Prekindergarten Program.

It was anticipated that the Early Learning Program and the Prekindergarten Program would complement each other in enhancing the intellectual, language and socio-emotional development of disadvantaged children and in preventing the kind of school failure which stems from achievement deficits that accumulate upon initial school-entrance deficits.

Other ideas and goals embodied in the new prekindergarten were the

products of a number of recommendations and of collaboration on the part of the parents of children in the PRIDE Project, local child care representatives involved in the West Chester 4-C Program, staff of the PRIDE Project, and staff of the West Chester Educational Development Center and of the West Chester State College.

Program Objectives

The Cognitively Oriented Urban Prekindergarten forms an important link between the Early Learning Program of the PRIDE Project and the kindergarten level of the formal school system. In this regard, the principal and overriding objective of the Prekindergarten Program is to prevent educational regression and to follow through on the Early Learning Program objectives for accelerating the overall development of the participating disadvantaged children to the degree at which they are able to compete at least adequately in the schools with those children from more advantaged homes.

While striving to attain these objectives, moreover, the program also focuses upon building within the children the types of characteristics believed to be related to long term success (e.g. Rowher, 1971): (1) a repertory of skills for location and learning of new information and new skills; (2) a repertory of skills for problem solving; (3) a motivational system which prompts engagement in learning and problem solving on a continuing basis.

The Prekindergarten Program is designed to provide an inexpensiveness of curriculum in order to enable practice and support for learning objectives in the home. Also, the operation of the program under the aegis of the Educational Development Center at West Chester State College

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provides a strategic point for improvement in the training of teachers for preschool and kindergarten education through a readily accessible practicum experience in an atmosphere of a continuously developing and improving curriculum. Future plans call for linking the Prekindergarten Program to primary level education efforts in order to provide a continuum of support for children of this type throughout the early school years.

GENERAL DESCRIPTION

During the 1972-73 school year, the prekindergarten was comprised of thirty-five children from economically disadvantaged families. All of the children had participated for two years in one of the Early Learning Programs of the Pennsylvania Research in Infant Development and Education Project.

The significant gains in achievement of the children and the successful operation of the PRIDE Project manifested the need for an extended program to forestail any intellectual, social and emotional regression and to continue the high achievement and motivational levels of these children. The prekindergarten was developed as a transitional program to provide for additional cognitive growth and to equip these children with the pre-academic skills necessary to compete adequately within the formal school system.

Program Operation

In the 1972-73 school year, the prekindergarten was operative from September to May, and classes were conducted at two different locations. The morning session was conducted at rented classroom facilities at one of the neighborhood churches in the borough of West Chester, while the afternoon session was held in the Laboratory School at the Learning Research Center of West Chester State College. The morning session contained children who had participated in the home-based segment of the PRIDE Project. These children had been tutored in the home for two years by an undergraduate assistant who made visitations twice weekly for a 45-minute instructional period. The afternoon prekindergarten was comprised

of children who had participated in the center-based segment of the PRIDE Project for two years and had experienced a comprehensive and intensive learning program within a controlled classroom environment. The experimental background of both groups included two years of some type of directed instruction; and, therefore, the curriculum of the prekindergarten was developed and adapted to accommodate their unique needs.

The prekindergarten was staffed by a Supervising Teacher, an Associate Teacher and several undergraduate students from West Chester State College who participated in the College Work-Study Program. The Supervising Teacher and Associate Teacher worked cooperatively in developing a curriculum and in conducting and managing the daily instructional program. Other classroom responsibilities included the supervision of the undergraduate student assistants who were fulfilling their work obligations, and various other students who were satisfying course requirements through observation or participation in the instructional program.

Participant Profile

For the thirty-five children participating in the Prekindergarten Program from the West Chester community in 1972-73, the ages ranged from 42 to 51 months, with the majority of the children born in the latter part of the year. There were twenty-three girls and twelve boys. Most of the children came from single-parent homes. The ratio of single parent homes to two-parent homes was coincidentally the same as the ratio of girls to boys. It was found for this class of prekindergarteners, therefore, that there were twenty-three single-parent homes and

twelve two-parent homes.

It was calculated that in each of the boys' and girls' homes there was an average of 1.3 siblings. This average was determined from total number of siblings in the home at the time of entry into the prekindergarten rather than the family size at the time of initial enrollment in the PRIDE Project.

Since the majority of the families were of the single-parent type and these single or separated mothers would have the greatest influence on their young children, some information was gathered on the mothers themselves. The median age for all mothers at the time of enrollment in the program was 22 years. The average age was 24.5 years. The age range for the thirty-five mothers was from 18 to 46 years. The source of income for most of the families was the Department of Public Assistance. Those parents whose income was a result of employment of some kind made less than $100 per week.

PROGRAM ACTIVITIES

One of the goals of the Cognitively Oriented Prekindergarten is to offer learning experiences to children with underdeveloped educational potential, and to boost the educational achievement levels of these children so that they can compete with more advantaged children in the public school system. The setting for most of this development is the classroom.

The classroom, where intensive learning should take place, is free from many unnecessary restrictions. The classroom for the Cognitively Oriented Prekindergarten is a place where children grow and learn individually and continuously. The classroom is unrestrictive to learning, and the children are given freedom of movement and opportunities for making responsible decisions. They are taught to function in many areas independent of adults. The way the classroom is conducted allows the child to be responsible for himself and others. This becomes an accepted norm, since any child who fails in his responsibility could disrupt the flow of activities for the class. From the time the children enter the class, to the time that they leave, they are made aware of themselves, others, and the responsibilities they have with regard to themselves and others.

The program's activities are divided into two complementary domains: the general curriculum and the academic curriculum. The daily activities schedule incorporates portions of both curricula on a regular basis.

Daily Activities Schedule

When the children enter the classroom each day, they hang up their

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outdoor clothing and go immediately into a free play situation. Around the room are toys, books, games, learning centers, and equipment to which they can direct themselves. On a set signal, the children clean the room by placing the toys and items which they were using back into their proper places. They work together until the task is completed. The children then are directed to breakfast if they participate in the morning session of the program. Those children participating in the afternoon session are directed instead to large group activities at this point. After breakfast, the children remove their own things from the breakfast table. This is one of their social responsibilities. From breakfast they go to a large group situation. Everyone is required to participate in large group activities. In these activities the children investigate daily occurrences which are integral parts of their lives. Large group instruction, among other things, includes: calendar work, physical exercises, perceptual-motor activities, aesthetics, movies and role-playing. Large group activities are usually conducted in a teacher directed manner, with the children following a general set of directions either by acting out responses or by verbally responding. Each child is given the latitude to be creative and imaginative in his individual responses. The activities described above, in large group format, are pursued in both the morning and afternoon sessions.

From the large group situation, the children are broken down into small groups for work within the academic areas of the program curriculum. The children are grouped homogeneously according to their abilities, interests and social development. The size of each group and the members in each group frequently differ from day to day, but all children are provided substantial exposure to all the subject areas. Every child is

taught by each teacher at least once a day. According to this instructional plan, the small groups are rotated from one teacher to another and from one subject center to another. One complete rotation around the classroom allows each group to cover all subject areas for the day.

Snack time also provides an opportunity for broadening the child's experiential background. Foods that are new and unusual for the child are often introduced, discussed, and eaten. Before snack, the children usually help in its preparation. During snack, the children are encouraged to use all of their senses to experience the foods. Socially, the children learn that cooperative work in preparing before, and cleaning up after, snack time can be fun as well as important in learning about responsibilities.

The period after snack is usually spent in one of several ways. Depending upon what has been scheduled for this part of the day, the children might: have a directed art period; see a movie; play a game; paint with finger or tempera paints; color; play with clay; listen to a story; create with craft materials; dance; or go individually to learning centers. This time is useful in giving the children an opportunity to unwind after the active instructional day. Usually toward the end of this period and just before the children prepare to go home, the day's events and the new discoveries of the day are discussed and reflected upon. This reiteration helps the children and teachers to evaluate the day and to view the day's events in perspective.

The General Curriculum

Both the general curriculum and the academic curriculum for the pre-kindergarten are essential for the positive development of the children

in the cognitive, affective, and psychomotor domains.

The activities planned for the prekindergarten child are based on the child's needs and the projected goals which it was anticipated the child will achieve. The needs are those which have been exhibited by the child in relation to his abilities, interests, wants and attitudes. Goals are delineated with respect to what will be beneficial to the child in helping him to build a sound educational foundation for continued developmental progress.

For individual activities, certain behavioral objectives are specified (i.e. a particular behavior is expected to be exhibited and/or changed). It is understood that each child has his own rate of development and what may be expected earlier for one child may appear later for another.

The curriculum for the prekindergarteners is broken down into two parts. One part consists of the academic areas. The subjects covered in this segment are: Reading; Math; Science; Social Studies; and Health & Safety. The subjects of Reading and Math are covered every day while the others are covered during the week only on designated days.

The second part of the curriculum is called the general curriculum. The activities found in the general curriculum include those relating to: art; music; small and large motor exercises; classroom operations; colors; shapes; left to right progression; and time and space concepts. These activities were devised to accentuate the skill areas of sensory-motor coordination, auditory discrimination, visual discrimination, and conceptual-language skills. The skill areas of the general curriculum are covered at varied times during the school day and school year, unlike the academic subjects which are covered at specific times during each

session on a scheduled basis.

The general curriculum skill areas are taught through finger play, songs, games, physical activities, art, role-playing, movies, records and books. The medium for instruction is usually either free play, small groups, large groups, or learning centers.

One section of the general curriculum, "Classroom Responsibilities and Introductory Classroom Activities," deals explicitly with areas which will eventually become an important part of the children's daily lives. This section covers calendar readings, weather interpretations, physical activities, and time and space concepts. Also, this section suggests areas where children can be most independent and most responsible for themselves and their classmates. It is deemed an important aspect of the general curriculum that opportunities be provided for the children to develop responsibility and to assert themselves as individuals.

The Academic Curriculum

Reading: The reading curriculum was developed for the prekindergarten child on the basis of his experiences during the preceding two years with the PRIDE Project. For two years the child had participated in a specialized readiness program. He had spent hours developing and strengthening his cognitive skills, through a programmed sequence of directed play. He had manipulated variables of both a concrete and abstract nature. He had been given the opportunity to examine his environment and to relate his experiences through verbal interaction. He was surrounded with the spoken word and had been introduced to the written word. The child was ready to attach written symbols to what he had seen,

said or done. He was ready to assign meaning to the written word, and this he would do in his prekindergarten year.

A whole-word approach is utilized in beginning systematic reading instruction. Initially the child learns to understand the meaning of and to recognize illustrations of a word before he is shown the written word. The word is used conversationally while explaining its pictorial representation and meaning. Once the child can identify the pictorial representation of a particular vocabulary word, then the written symbol is presented to the child. Fixing the words in the child's mind comes with repeated presentation through a variety of activities and correct usages of the words. Other techniques for teaching beginning reading are as follows:

Word Form Clues - words having distinctive shapes for recognition.

Expectancy - reading familiar material.

Conceptual Clues - recognition from contextual meaning.

Sight Word - look/say method for basic vocabulary.

Activities were developed around these techniques and were incorporated into an overall curriculum for teaching reading to the prekindergarteners.

Math: Daily, the young children are confronted with quantitative measures, qualitative measures, numerals, numbers, and sets of items. Mathematical concepts play a role in a wide variety of activities. The children must learn to deal with these concepts if they are to better understand their environment. The math curriculum was developed to help the children to identify, understand, and work with these concepts. They are given activities which require the use of quantitative skills. They learn how to identify sets and how to assign numerals which appropriately

represent the quantitative contents of those sets. The curriculum's objectives allow for a great deal of manipulation of real objects and generally follow the dictum that children learn best by doing.

Social Studies: Each child participates in a social studies curriculum that is designed to develop within the child an awareness of his present and future relation to his community as a whole. The child is aided in understanding his immediate environment, his community in relation to the town in which he lives, the town in relation to the state, the state in relation to the country and so on. The Social Studies curriculum is concerned about the individual child, his role in the community, and helping him to understand that role. The curriculum offers first-hand experiences, field trips, and activities that allow the child to observe, and relate to, his immediate social environment.

Science: The science curriculum was developed with the recognition that young children are indeed curious about their physical and biological environment. It was designed to stimulate the child to question "why," to enjoy learning through doing, and to investigate new experiences in an active rather than passive manner.

Activities for the science curriculum are arranged so that explanations of material phenomena are related to the children through discussion and class projects. The children are encouraged to ask questions and to explore each area independently. The child is exposed to physical and biological relationships in which he is given the opportunity to manipulate the relevant variables in an effort to become more aware of the cause and effect nature of his environment. Some topics of study include: plant growth, the development of the chicken embryo, the origins of weather, and the characteristics of magnetism.

Health and Safety: Development of the health and safety curriculum was centered around the child and his own role in supporting his health, safety and development. The activities of this curriculum provide the child with tasks which are designed to help him in recognizing and fulfilling his basic self-needs. Some topics of study included in the curriculum are: personal care and grooming, playground safety, and rules of safety when playing in the neighborhood.

EVALUATION

Evaluation of the Cognitively Oriented Prekindergarten Program was undertaken from a variety of different perspectives. It was deemed important to assess the effects of the program on the following areas: (1) parent and community acceptance; (2) operational strengths and weaknesses; (3) behavioral changes in participating children; and (4) intellectual, language and social growth of participating children as measured by standardized tests.

Parent Cooperation and Community Support

Prior to their prekindergarten year, the parents of the prekindergarten children had participated in the PRIDE Project's Early Learning Program, Levels I and II. These two years of association with the Project had helped the parents to understand, evaluate, and be a part of their children's experiences. By the time the children started prekindergarten, the parents were well acquainted with the operation of the Project and were pleased with the progress of their children.

At the time that their child was first enrolled in the Project, the parents received an open invitation to visit the center and to talk with the teachers. Each year the invitation was repeated and the year of the Prekindergarten Program was no exception.

The first year of the Prekindergarten the parents were asked to participate in, and to add to, the learning experiences of their children. They helped with supervision of the children on field trips. They added to the festivities of birthday parties, and they came often to watch the children's performance in the classroom.

The parents of the participating children, and the community in

general, have responded well to this program and have been very supportive of it. Many expressions of appreciation and encouragement have been received during the year.

Program Strengths

The two Prekindergarten teachers were highly qualified and possessed a profound understanding of the nature of the participating child and his background. These qualities aided them in the development of their lesson plans and in instructing the children. The teachers were very much aware of the children's past experiences in the Early Learning Program of the PRIDE Project and were well-acquainted with the children's extended families.

This knowledge assisted the teachers in their efforts to group the children appropriately for various instructional purposes, in eliciting from the children their best performance and in encouraging them to develop to their fullest capabilities. In addition to small and large group activities, each child received a certain amount of individualized instruction. The individualized instruction permitted the child to advance at his own rate of progress. The child was not pressured to fulfill behavioral goals. Instead the child was guided and praised for his efforts as well as his successes in various curriculum activities. This approach to instruction promoted a positive and healthy self-concept in the child.

The children were also encouraged to work independently. Learning centers and activities during free play provided the child with the opportunity to express himself imaginatively and creatively. This independence required that the children accept certain responsibilities which in turn

helped to foster self-discipline. They had to learn that in the classroom at certain times they were free to do whatever they wished as long as they did not interfere with the rights of their classmates, while at other times there were set procedures to be followed. The children behaved remarkably well under these circumstances, and they began to assume the kinds of responsibilities that are typically expected only at older age levels.

The children of the prekindergarten also enjoyed success in developing both reading skills and mathematical skills. A great deal of time, material and effort was devoted to the reading program by the staff of the prekindergarten. The Total Environment Room was used extensively for reading instruction. In this room, there was a 360^{o} projection surface on which pictures and words were superimposed. Audio-visual instructional programs were developed for this room in an effort to utilize a whole word approach to the teaching of reading. The children would play various reading games using audio-visual aids inside the circular area bordered by the screen. The children enjoyed these types of reading activities. In addition the children were exposed to experience charts, card games, bingo and several other activities designed to develop their reading skills. The children's enjoyment of the games enhanced further interest in words and aided in the development of positive attitudes toward reading. All of the children were quickly able to identify their written name. Several children could identify twenty or more simple words and many children were able to read simple sentences, the content of which they could relate to their own experiences. Some of the children could read compound sentences, and two children were reading even more extensively. The children derived enormous satisfaction from being able to

identify words, and their parents seemed to reinforce their success.

Mathematics was another successful subject area in the Prekindergarten Program. The children received extensive individualized training as well as small and large group instruction. Many activities were devised to enhance the learning of mathematical concepts. Through these activities the children were able to learn to count, recognize numerals and to understand the physical quantity that each numeral symbolized. Several children were able to rote count to twenty and identify sets of objects numbering from ten to twenty. Some children were even capable of working with numbers greater than twenty and were able to understand work with more complex mathematical symbols such as greater than (>) and less than (<). The children were aware of the distinction between quantities and qualities. They were able to understand that numerals were symbols for quantities and that various other symbols such as (>) (<) represent quantitative relationships. In addition to numeral recognition, the children were successful in many attempts at set recognition. When presented with sets of objects less than ten, they were taught to identify the set without counting the individual members of the set. Some children consistently performed this task with as many as eight members in a set. All the children as in reading, enjoyed some degree of success in the area of mathematics.

Other positive outcomes of the Prekindergarten program occurred in the subject areas of Health and Safety, Social Studies, and Science. The vocabulary of these children was increased greatly through their exposure to the multitude of terms relating to these subject areas. The children were introduced to such words as "photosynthesis," "root," "seed," "embryo," and "incubator" via discussions and instruction on plant growth, developmental

stages of the chicken embroy, and other areas of study. Through these subject areas, the children also became more aware of their bodies and of their senses. The children were taught about safety and about matters of personal health and hygiene and they were encouraged to put these principles to use both within and outside of the school facilities.

An important emphasis in the Prekindergarten Program was to create an atmosphere within the classroom which was both conducive to learning and uninhibiting to individual freedom of expression. This type of atmosphere together with the individual success of each child, fostered positive and constructive attitudes toward learning and toward the total school experience. The children enjoyed school and were anxious to attend class and participate in the classroom activities.

Program Weaknesses

During the first years of operation of the Prekindergarten, accompanying the program's many strengths were a few weaknesses as well. One such weakness was the separation of the two classroom facilities. The morning session was conducted in a large classroom at a neighborhood church, facilities for which were rented by the Prekindergarten Program. The afternoon session, on the other hand, was conducted at the Laboratory School of the West Chester State College Learning Research Center. Instructional material frequently had to be transported from one location to the other. The facilities at the Learning Research Center, from an educational standpoint, were superior to those at the church in many respects. The church was also situated at some distance from the college which often caused transportation difficulties for any undergraduate student workers who may have been assigned to the program as teacher assistants.

Another problem encountered was the transportation of the children to and from school. A station wagon had to be rented from a local automobile dealership. Repairs to the car had to be made during the school day which sometimes interfered with the daily schedule. In addition, it was difficult to find reliable drivers to work the unusual hours required in transporting the participating children. For both the morning and afternoon sessions, provisions were made to transport the children in two trips so that the safest possible conditions could be maintained while the children were in transit to and from the classroom. This tended to be a very tedious and time-consuming, though necessary, process.

Another problem which at times confronted the Prekindergarten Program was the inconsistent attendance of some of the undergraduate teacher assistants. Occasionally these assistants did not inform the teachers of an upcoming absence, and frequently the daily plans or routine had to be rearranged or totally discarded as a result of unanticipated changes in the child-teacher ratio.

There were also some weaknesses in curriculum. More readiness training could have been provided for the morning prekindergarten group. These children were lacking experience in the academic and social areas. Many of these children had never before been exposed to the structured social situation in the classroom. Therefore, instruction had to be modified to accommodate these children's needs. From the first year's operation it became apparent that even more alterations in instruction and curriculum were necessary due to the differences in the educational program experienced by these groups during the immediately preceding two-year period. The morning prekindergarten children required additional readiness training and greater social direction than their counterparts in the afternoon session.

Other problems concerning instruction and curriculum were minimal. There were initial problems with daily planning and time allotment which were the result of need differences between the morning and afternoon groups of children. These problems were resolved, however, before too long into the school year.

Observed Behavior Changes

A number of children participating in the Prekindergarten Program exhibited marked behavioral changes of a positive nature. That these changes were generally a continuation of a pattern of improvement begun in the earlier two years of the PRIDE Project makes them no less startling. In order to gain more of an insight into the kinds of behavioral changes which occurred as a result of the program, parents of the participating children were interviewed at the end of the program year and asked the following question:

"Often a parent notices changes in her child which she thinks are a result of going to school. Sometimes a child speaks new words. Sometimes he makes clever use of his playthings. Sometimes, when before he was shy, he now plays better with other children. What changes that you saw in your child during the year do you think occurred because of school?"

Listed below, under the first names of the participating children, are the various responses to this query which their respective parents offered during the interview session. Although not all parents were able to be so interviewed, it is believed that those whose remarks are included here are a representative sampling.

ARTIE: "He talks more. Sometimes he plays with other children. Sometimes he doesn't. He seems to know a lot - his colors, numbers. He can put puzzles together. He matches cards. He is a little more active now. He knows more than other children do. Artie likes to play by himself a lot. He'll try to show other children how to do things. He talks more and clearer."

BRIAN: "A lot, he really progressed a lot - his colors, numbers, alphabet. He's talking better. He knows more words. He shares more. He's always counting and says his alphabet. He was shy at first and now he's not. Brian knows more. If he has blocks he tries to show other kids how to build things. He tries to teach them how to draw dogs and houses. He seems more mature than other kids his age."

CURTIS: "He talks more and he talks better. He can count to 20 and he knows his ABC's. He sings all the time. His attention span is longer. He recognizes words - from the workbook, and he associates things. Also he learned responsibility when he had to do things. He enjoyed it and was upset when he had to stay home."

DAWN: "She seems to know everything. She knows words, colors, games on TV - she can play them. She tries to read to her sisters. She can count. She plays all the time, and gets along well with other children. Most of the time she plays school. She teaches songs she learned in school - if they want to play a game she already played in school she tries to teach them. She names everything - like instead of saying 'that' - she says the name of it. She'll say so and so had that color dress on and it was pretty. When she gets dressed, she tells me what she wants to wear."

GARY: "He talks more - he talks a lot. He gets along better with kids, and he plays more. Before he threw his toys around, now he plays better. He sings, he knows how to count, his colors - he also knows words in a book. He's learned how to put the numbers in order - not all of them, but some. That's about it really - oh, he's more interested in TV, too. He's more active - he goes on swings now. I think reading the words helped him. He likes the books, and he recognizes the words. Also playing with kids - he plays with them better. He tries to teach them songs, days of the week, and numbers and things."

GLORIA: "Gloria Ann is too fast for a child her age. She makes little faces that she probably learned from kids in school. She asks many more questions than she used to ask. She has to be boss of everything - if things don't go her way then she doesn't want to play. Sometimes she can act very grown-up and other times she acts like a baby. She told about the eggs and the chickens. She said the word, 'embryo." She told about how many days it would take to hatch the eggs. She told about how the lightbulb was supposed to warm the eggs to make them hatch. She told about the flowers and how you're supposed to put water on them to make it grow."

JENNIFER: "She knows her colors and numbers. She is more grown-up and independent. She can dress herself and she doesn't want any help. She loves books and coloring. She especially loves story books. She plays more creatively with them. She likes more grownup toys. She likes Barbie dolls rather than baby dolls. She shares very well. She was a little shy, and now she is very outgoing. It's amazing, but I think she is up to the level of a six-year-old child. She didn't stay a baby long. She loves to show people how she can count. She can tell stories from her books. She has a good memory. She's been around a lot of kids that went to Head Start and even though they're older, she can do just about everything better than

they can. She shows them how to do things. She jumps rope and tries to ride a two wheel bike. Learning her alphabet, colors and numbers helped her because she says them all the time. She talks very well. She can talk just like my third and fourth grader - she uses good sentences."

JULIE: "She talks more. She memorizes beautifully. She also can distinguish things. If she hears a song on TV, she'll know what commercial it is. She is very observant. She knows her colors and her numbers. She really amazes me at times. She shows her cousins how to do things. She can distinguish just about everything on Sesame Street. She says her ABC's. She gradually developed from the very beginning."

LAMONT: "He picks up more - his numbers, the alphabet, colors. He plays more - he's more friendly, too. He was shy before and now he's friendlier. He sings, too. He learned new words, too, like 'incubator' which he learned at school. If I'm cleaning - he'll hand me objects and tell me what they are. He learned his numbers and the alphabet, and this especially helped him learn to write his name."

SCOTT: "Yes, mostly in his behavior with other children, I guess because he's around them more at the center. He talks a lot better and he is using bigger words. He's got an erector set and now he tries to build things with it. He draws things and he's coming along good. He's developed a lot. He seems to have more sense than other children. He can express himself better. He tries to show his sister how to do things. He tries to read. He knows his numbers and colors more than they do. His coordination is a lot better - he can skate now."

SHAWN: "She speaks more clearly - more understandably. She learned new words and she talks in sentences. She seemed withdrawn when she started - now she's more outgoing. She knows all her numbers, colors, and ABC's. She can even read words off flashcards. She's more interested in learning and school - she wants to learn now. She acts a little more mature, too. She wants to do more for nerself - like dress herself. She's more active in exercises. She likes to be the leader - like when playing house - she wants to be mother or teacher. She likes to teach other children everything."

SHAWONNETTE: "She has learned to count better and now she talks better. She can dress herself and bathe herself, too. She even spells her name a little. She shares a lot more, even her food. She answers the phone. She was shy before and now I can leave her with anybody. I think she gets too friendly. She knows her numbers from one to twenty. She knows all of her colors. She sings and tries to make up her own songs. She can remember a story you read to her. She told us about the time they were going to raise chickens and how they were going to hatch."

VAWN: "Yes, she was different from playing with other kids. She learned counting and colors. She shares better. She was kind of shy at first and now she's more outgoing. She is more grown-up now that she started. She knows how to tie her shoes. She washes herself and dresses herself. She only plays with the girl next door and she's in first grade."

VERNON C.: "He is much smarter now than most other children. When they

are in the store, he'll tell them not to pull things off the shelves. He knows that children shouldn't play in the street and tells them to get out when they are. He'll tell this little boy that he has his shoes on wrong. He'll tell me when he has a verse to learn and ask me to help him with it. He really learned just about what school would be like. He was really disappointed when they were having transportation problems - he thought he was never going to school."

VERNON D.: "He can do anything. He can count. He knows his colors. He can describe anything he sees. He can name any animals. He can say his alphabet and he recognizes most of the letters. He plays among children better - he shares well. He's good in almost everything, out of school, too. He runs errands. There's nothing he can't name. He can really describe. He's always teaching somebody something. He's always trying to teach songs and rhymes. He's not a bit hesitant about anything. If there's someone he doesn't know, he'll make himself known."

Test Results

In order to objectively assess the effects of the Prekindergarten Program on the overall growth and development of the participating children, a large battery of assessment measures was administered to each child during the two-week period immediately preceeding the start of the program and again during the two-week period immediately following the close of the program year. The tests covered the developmental areas of intelligence, language, and social growth, as well as the more specific curriculum areas of reading and mathematical skills. Following is a list of the specific tests utilized in this pre-post evaluative design:

Development Areas

1. Slosson Intelligence Test (SIT)
2. Peabody Picture Vocabulary Test (PPVT)
3. Verbal Language Development Scale (VLDS)
4. Vineland Social Maturity Scale (VSMS)

Curriculum Areas

5. Gates-MacGinitie Reading Test (GM)
6. Preschool Assessment of Reading Test (PAR)

7. Preschool Assessment of Mathematics Test (PAM)

In terms of overall intellectual, language, and social growth, test results in these developmental areas are presented in Table 1. In this table, both the means and standard deviations (SD) for each of the testing sessions are given. As can be seen from comparisons between pretest means and posttest means, on the average, the Prekindergarten Program participants gained developmentally in the areas of mental growth, hearing vocabulary, general language ability, and social skills. The results of a correlated t-test between pre- and posttest means indicate that all these gains were found to be statistically significant at the .01 level, as well.

The mean gain in mental age from pre- to posttest on the Slosson Intelligence Test, as derived from the table, was calculated to be 22.37 months. When apportioned over the seven-month program period, this represents a mean gain in mental age of about three months for every month in the Prekindergarten Program, or three times the normal intellectual growth rate.

In terms of hearing vocabulary, as measured by the Peabody Picture Vocabulary Test, the mean raw scores reported in the table, when converted to representative age levels, show the children beginning initially at about the 42 month level and ending at the 51 month level. This yields a gain of nine months in hearing vocabulary over the seven-month program period, for a rate of gain about 1.3 times the normal.

On the Verbal Language Development Scale, the mean raw score of 27.44 on the pretest when converted to an equivalent language age reveals that the children were operating at the III-IV year level at the beginning of the year, while the posttest score of 34.25 indicates that they had progressed to the initial stages of the V-VI year level by the end of the year.

Gains in social development, as measured by the Vineland Social Maturity Scale, were also substantial. The raw score values given in the table indicate that the children progressed from a mean social age equivalent of about 4.3 to that of 5.9 years of age. This represents a gain of 1.6 years, or 19 months, in social age which is equivalent to a rate of gain of about 2.7 times the normal.

TABLE 1

Pre-Post Test Results in Developmental Areas

Measure[1]	Pretest (Mean)	(SD)	Posttest (Mean)	(SD)	t
SIT	51.46	7.01	73.83	10.00	17.92**
PPVT	35.72	8.58	44.42	11.51	5.29**
VLDS	27.44	3.13	34.25	2.57	12.74**
VSMS	51.92	3.95	60.42	2.74	14.70**

[1]Scores given for SIT are mental ages in months. All others are given in raw score form.

**$p < .01$

Turning next to a consideration of what may be termed the curriculum areas, the results of testing here are presented in Table 2. As can be seen from this table, gains from pre- to posttest were evidenced in both the reading and mathematical skills areas. Correlated t-tests comparing pretest and posttest means further indicated that these gains were of statistical significance at the .01 level.

Children's scores on the Gates-MacGinitie Reading Test increased from

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about the tenth percentile at the start of the Prekindergarten Program to the twenty-first percentile at the conclusion of the program year. This means that the participating children, at the end of their prekindergarten year, ranked at the twenty-first percentile in reading readiness when compared with children nationally who were a year their senior and who were just beginning first grade. On the Preschool Assessment of Reading Test, which measures both word recognition and comprehension, a similar gain was evidenced.

The Preschool Assessment of Mathematics Test was designed to measure understanding of a wide variety of quantitative and qualitative mathematical concepts. The pre-post gain of about 22 points on this test, out of a possible 100 points, represents nearly an eighty percent improvement over the pretest score for the participating children in the Prekindergarten Program.

TABLE 2

Pre-Post Test Results in Curriculum Areas

Measure[1]	Pretest (Mean)	(SD)	Posttest (Mean)	(SD)	t
GM	9.56	7.33	21.05	18.41	4.67**
PAR	1.36	5.71	15.19	16.27	6.36**
PAM	28.31	11.69	50.47	16.86	9.16**

[1]Scores given for GM are readiness percentile scores based on a sample beginning first grade. All others are given in raw score form.

**$p < .01$

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Conclusions

By all standards, the initial program year of the Cognitively Oriented Urban Prekindergarten must be judged a success. It gained a high degree of community support and parent interest and cooperation. It engendered a number of positive behavioral changes in the participating children, and the intellectual, language and social growth of these children was significantly enhanced as a result of the program. Good results speak for themselves.

While many questions have been answered with respect to the effectiveness of the Cognitively Oriented Prekindergarten, a number of additional questions have been raised by these findings. It should be noted that the two prekindergarten classes involved in the program differed markedly in terms of the kind of preschool educational experiences to which they had been exposed during their immediately preceding two-year period of enrollment in the PRIDE Early Learning Program. No attempt has been made in this report to partial out the effects of the Prekindergarten Program on either of the groups independently. Thus, the question of differential effectiveness of the Prekindergarten Program on a group of children having experienced two prior years of center-based preschool instruction as opposed to a group having received two years of home-based instruction remains unanswered. This undoubtedly will be a subject for further analysis.

In addition, there is the simple fact that the participants in the prekindergarten did actually undergo some form of preschool educational training during the two-year period immediately preceding their enrollment in the Prekindergarten Program. Although this represents a highly desirable continuity of "compensatory" educational programming for these children from low-income families, there are no definitive indications as to whether or not this Prekindergarten Program would be as effective with children who have had

no formal educational programming prior to their prekindergarten experience. Thus, in providing for what may approach the ultimate in preschool program continuity, some generalizability of the results may have been lost as a consequence.

It is anticipated that future program years will provide additional support for the encouraging results presented here, and it is hoped that perhaps replications of this program may be instituted by other educational agencies, elsewhere in the State or Nation, in order that generalizability of these findings to other settings and conditions may be more adequately assessed.

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THE PARENT INVOLVEMENT PROGRAM

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BACKGROUND

The Parent Involvement Program is a component part of the Pennsylvania Research in Infant Development and Education (PRIDE) Project (Dusewicz, 1972; Dusewicz and Higgins, 1971; 1972). It was designed to encourage and to help mothers teach their young children many things in the home during the infant and toddler stages in order to enhance their development and better prepare them for later entrance into a preschool or regular school environment.

Parents as Teachers

In our modern society, the teaching of children has traditionally been relegated to that brand of professional whom we more commonly refer to as a "teacher." Parents have been typically assigned a more passive role in their child's formal education and frequently are urged by the educational profession to avoid any direct attempts at formal instruction in the home as such efforts might prove incompatible with those of the school.

More recently, however, the involvement of parents directly in the education of their child at the preschool level is being rediscovered as a valuable aid to the child's development. Studies on modeling have indicated that older significant persons in the life of the child often serve as models whose qualities and behavior the child attempts to emulate. In summarizing research on the actual effect or influence of such models, Bronfenbrenner (1968), concludes that measurable changes in the behavior of a child are facilitated by exposure to models exhibiting the desired behavior at an appropriate level of understanding for the child. The effect or influence of such models is even enhanced: whenever there is strong emotional involvement present between the child and model; whenever complex patterns of interaction exist; whenever the model is perceived by the child as having high status; and whenever the model

represents a group or affiliation of which the child is a member or of which the child is desirous of becoming a member.

A child's parents are in the rare position of possessing all of the above criteria for exerting a very powerful influence on a child's developing behavior patterns through use of the modeling process. Moreover, the phenomenon of modeling represents probably the most important impetus toward involving parents in the educational activities of their children. If parents are given the opportunity, motivation, and exposure to the kinds of instructive and enjoyable activities which aid the development of their children, they can contribute greatly to the building of a firm foundation for their children's formal learning experiences. It follows then that any appreciable and enduring improvement in the child's development can be effected only through an appreciable and enduring change in the behavior of persons intimately associated with the child on a day to day basis (Bronfenbrenner, 1968).

From the very inception of Project Head Start in 1965, parent involvement was viewed as an important component, and many studies were done on the precise role played by parents in the development of their children. But here the concern with parents was only a secondary one and greatly subordinated to the center-based Head Start concept in which children were taught and cared for by a trained staff of teachers and paraprofessionals.

Parent Training Programs

One of the early programs in which parents were of a more central concern was conducted at the University of Vermont (Samenfink, 1967). This pilot project involved five low-income families during the first year and the original five plus six middle class families during the second year

of operation. While possibly the greatest service it may have offered was assurance and support, this program seemed to demonstrate that the way to a child's development is through the parents and more particularly the mother who often is at home with him most of the day.

The Parent Education Project at the University of Florida (Gordon, 1967) has adopted the approach of teaching low-income mothers to teach other low-income mothers how to stimulate their infants. Relying heavily upon the normative work of Gesell, Cattell, and Bayley for the organization and sequencing of stimulating materials, emphasis was placed upon modeling for the mother who in turn would model the specified behavioral pattern for the child. Although there was some attrition on the part of the participating mothers because of declining interest and moving out of the immediate geographical area, the program was able to demonstrate the viability of the concept and its continued workability over time. There was also some evidence of beneficial effects upon the children as measured by testing at six months and one year.

The Ypsilanti Home Teaching Project (Weikart & Lambie, 1968) was an experimental effort designed to test the feasibility of sending teachers into the homes of disadvantaged families for the purpose of providing a training program for the mother as well as a tutoring program for the preschool child without an accompanying classroom program. Only four year olds and their mothers were included in the experimental sample. The program was individualized and involved a one and one-half hour visit each week. An attempt was made to raise the intellectual functioning of the child through direct child-teacher interaction, while at the same time attempting to foster teaching and child management skills in the mother through mother-teacher interaction. Although acceptance of the project on the part of the mothers was quite good, results of testing on

the Stanford-Binet and on the Peabody Picture Vocabulary Test yielded no significant differences between the experimental children and a control group of children.

Clarizio (1968) attempted to provide a different type of approach, with emphasis upon small group meetings and counseling for parents. Three groups of four to five-year-old children were used: two experimental and one control. Children in both experimental groups were enrolled in an eight-week summer Head Start program. The parents of one of these experimental groups were involved in small group meetings with staff as well as meetings in which guest speakers appeared. Parents of the other experimental group received the same treatment as above with the addition of an experienced social worker. The third group, the control group, was not involved in either Head Start or parent activities. Results on the Teacher Rating Scale showed changes in the predicted direction, but these were not significant.

In a study by McCarthy (1968), the effect of parent involvement was assessed in three groups of families whose children attended Head Start classes. For one group an individual home visit plan to work with the parents was undertaken. In another group, parents were involved only to the extent of attending periodic group meetings. In the third group, no effort was made at all to work with the parents of the participating children. Pre- and posttesting on the Peabody Picture Vocabulary Test (PPVT) and the Illinois Test of Psycholinguistic Abilities (ITPA) yielded results showing significant gains for the home visit group on the ITPA and exhibited a significant positive change in parent attitudes as measured by the Parent Attitude Survey (PAS). No significant gains on the ITPA or the PAS were shown for any of the other parent groups, nor were significant gains

on the PPVT detected for any of the three groups.

A study conducted at the Demonstration and Research Center for Early Education (Forrester, 1971) involved the training of 20 low-income mothers to provide cognitive stimulation for their seven to eighteen-month-old infants. A home visitor worked in each home for approximately a one-hour period for a maximum total of twenty-four home visits. During the visits, attention was given to physical and social aspects of the home environment. The home visitor demonstrated and reinforced adult behavior patterns which provided for the physical, emotional, social and intellectual development of the infant. Results of pre- and posttesting indicated significantly higher scores for the experimental group over a control group on the Bayley Mental Scale, the Griffith Mental Development Scale, and the Uzgiris-Hunt Infant Psychological Development Scale. Overall, the program appeared to be most successful in influencing favorably several areas of infant intellectual functioning.

The general inconclusiveness of results of parent-centered programs in the area of compensatory education (with the exception of Forrester, 1971) coupled with the lack of specific information as to the nature of change in the parent-child relationship fostered by such programs, thus provided the major impetus toward initiating the present Parent Involvement Program.

PROGRAM DESCRIPTION

The Parent Involvement Program began in the Spring of 1972 with nineteen mothers participating. These participants were randomly selected from the mothers of the forty disadvantaged children enrolled in the infant group (12-20 months) of the PRIDE Project. The mothers were then contacted and a convenient time for the tutor's visits to the home was set up. The tutor visited with each mother for a one-hour period each week to discuss specific aspects of child development and to provide her with specific related activities to work on with her child. The mother was asked to spend at least fifteen minutes a day (one hour and a half per week) working with the child on the activities. The mother was encouraged to choose a time for these activities which would remain fairly consistent and during which there would be few distractions for both the mother and the child.

One of the main objectives of the program was to give the mothers a practical reservoir of information from which to build a better understanding of both her child and her child's development. The program, therefore, also stressed the types of activities which would help her child grow physically, mentally, emotionally, and socially. Most important, however, was the idea that the activities would serve as a bridge for mother-child interaction and communication.

Discussion Sessions

The discussions for the Parent Involvement Program were designed to last approximately a half-hour each week. All areas of child development were covered. The first six lessons provided general information on cognitive development, emotional development, social development, and language development in relation to the child's physical growth. The mother was also familiarized with the various stages and principles of physical develop-

ment. The next nine lessons were concerned with talking about each area of growth in depth. The remaining nine lessons dealt with such subjects as the development of values and moral judgment, childhood illnesses, toy selection, and child care.

Because of the hierarchical development of the concepts throughout the lessons, the mothers were expected to contribute more and more in terms of questions and examples to the lessons. Through the mother's participation, the tutor was able to determine whether the concepts were being presented clearly enough or if the mother was developing any misconceptions about child development. The discussion between the mother and tutor also enabled the mother to better view the application of these concepts to her own child.

Activity Sessions

The discussions formed the background for understanding the concepts which underlie the activities. The second half-hour of each lesson involved discussion of the child's success and problems with the activities from the previous week. The tutor also described the new activities with the mother and answered any question she may have had about what she did and what the child was expected to do. It was emphasized that the child should be praised and encouraged for trying his best, not for perfection of performance in each activity.

The activities were designed to be fun for both mother and child. If a child had no interest in a certain activity, the mother was encouraged not to force the child to work with it, but rather to try to interest the child in a different activity.

The materials required for the activities were either common household objects or materials which had been made by the tutor and given to the mother.

However, even the prepared materials could have been made by the mother herself if she had the time. For example, the naming of household objects required the child and the mother to walk through a room and talk about all the objects they saw. Some pictures of various household objects were also provided by the tutor. As a supplementary activity, which was done if the mother had time and the child was interested, the mother and child were to sit down with a magazine and simply talk about the pictures they saw. Nesting and stacking boxes required three empty boxes or cans of varying sizes which would normally be thrown away in the trash. In this particular activity several mothers used plastic cups which varied in size. One mother used some cannisters of three varying sizes.

Each week, there was at least one activity which involved motor co-ordination, one which dealt primarily with cognitive development, another with language, and a fourth activity dealing with emotional growth, social growth, or sensory discrimination. Naturally, these activities were not entirely separate from each other since all areas of the child's growth are well-integrated in most tasks in which he may become engaged.

The activities increased in difficulty and level of cognitive and language skills required of the child to be successful. The increase in difficulty was gradual and the child should have been able to progress through the activities with success.

For example, if the child was indirectly introduced to colors by a game of matching poker chips with objects of the same color, he would not be required at first to learn the names of the colors themselves. Several weeks later, however, the child would be given a color lotto game in which he would gradually learn to recognize names of the different colors by selecting the particular color the mother asked for, telling her what color

he had selected, and then matching that color with the same color on the game board.

The activities which teach the concepts of "large," "middle," and "small" sizedness were introduced over the course of five lessons. The child was first exposed to the words by playing with an apple lotto game which involved the various different sizes. The mother gave the child one apple at a time, telling him which size he had. The child was asked merely to match the apples, not to identify the size himself. About ten lessons later, the child was presented with four different objects, each type of object having a large and a small size. The child was asked to identify which of the pair of objects was larger and later, which object was smaller. The next week, the child was asked to sort all the large objects into a large container and then, all the small objects into a small container. The same sequence was used for two more weeks to introduce the concept of middle sizedness employing the same four types of objects. The mother was encouraged to let the child proceed at his own rate through each step so that at the end of the fifteenth lesson, the child would be well on his way to mastering the rudiments of size discrimination and ordination.

EVALUATION

Evaluation of the Parent Involvement Program was accomplished via participant observations, tutor observations and parent responses on a specially constructed survey instrument. The Survey of Parent Attitudes (SPA) was administered to each participating mother, on an interview basis, upon the completion of lesson seven although the total program initially consisted of sixteen lessons. The results of this mid-program measure are presented below in the "Survey Results" section of this report.

A weekly report of each child's progress with the activities was received by the tutor in the form of a progress sheet filled out by the mother. The mother recorded the amount of time she and the child spent on the activities and the amount of success the child experienced in each activity rated on a three-point scale - (1) fast, (2) OK, (3) needs more time. The mother also recorded any problems, questions or comments she may have had during the week.

One copy of this report was given to the tutor and the other copy was kept by the mother. In this way, both the tutor and the mother had previous records of the lessons and could follow the child's progress through the program.

Participant Observations

The most positive feedback from the program proved to be the comments about the discussions and the activities made by the mothers during the hour sessions with the tutor. All of the mothers enjoyed the program and felt that they were gaining new insight into their child's behavior and growth patterns.

One of the major developments which many of the mothers attributed to

the program was the increase in their children's vocabulary and speech. Not only were the children apparently using more words, which had been introduced to them through picture identification and various associated activities, but they were also speaking more clearly.

After learning the words "smooth" and "rough" through a game of tactile recognition, one child went to each individual in her family rubbing his or her face and then declaring the skin either smooth or rough. Another child was able to name all the animals which he saw on a farm visit as a result of his mother's work with him on the activities given to her in the lessons. After working on an activity involving the parts of the body, another mother was amazed when her child was able to tell her exactly which part of his leg was scratched.

The mothers were constantly commenting on the large amount of interest which the children displayed in the activities. They felt that this interest was mainly due to the fact that the child was receiving more attention from his mother. For at least fifteen minutes a day, the child had his mother's entire attention. It was also a time when the child would be praised and encouraged while he was engaged in the activities.

The lessons also served as a means for the child's receiving attention from people who visited in the home. The mothers made such comments as:

> "Arlene always wants to show off when we have company. She runs to the closet and asks for her activities folder."
>
> "Whenever someone comes, TiTi is always there showing them what she can do."
>
> "As soon as his Daddy comes home, Drew will get the materials and show him how to do them."

Older children in the family also took an interest in the activities of their preschool sibling. Often if the mother had trouble getting the child interested in a certain game or did not have enough time to work with the

child, the older children would work on the activities with the child.

> "Leyda wouldn't follow the directions when I would do them with her, but if her brother and sisters would do them too, then she would do them."
>
> "Drew's sisters like to play school. They get his materials out and use them for the lessons."
>
> "Beulah's brother likes to color the pictures for her. Sometimes when the older children get home from school, they get all her lessons and have a lot of fun doing them with her."

Although older children were frequently of help to the mother in working with the participating child, if the older one was only a year or two older, the mother sometimes had problems with the older child always wanting to work on the activities with the mother too. In this situation, the older child often dominated the activity time by showing that he already knew all the answers. He would give the answers or do the activity before the younger child had a chance to respond or participate.

In such a situation, the mother either tried to spend as much time with the older child reading a book or playing some sort of game or she tried to get the older child to help the younger one do his activities when she did not have time. Both solutions were somewhat successful.

The overall Program helped the mother become more aware of the growth and development of her child. Through discussion of the various concepts and the specific problems of her child, the mother felt she understood the child's behavior better at times, and even had a little more patience with him. The mothers were often amazed at the activities which the child could perform successfully.

The mothers made few comments about the discussion part of the lessons. About one-third of the mothers were actively involved in asking questions as the discussion proceeded and giving examples of what the tutor was talking about. The other two-thirds of the mothers listened, but made only infrequent

comments until the activities part of the lesson was reached.

Tutor Observations

There was considerable variance in the extent of participation in the program by the mothers, although they were all very receptive of the program. About a quarter of the mothers worked with their child for at least a half hour every day. Another half worked with the child for the suggested amount of time, sometimes getting an extra five minutes with the child on one or two days. The remaining fourth only went through the activities once during the week, which may have amounted to about a half hour at the most before the next scheduled home visit.

For the first couple of weeks, there was some difficulty in drawing responses from the mothers to either the discussion section or the activities. However, by the end of the seventh week, all the mothers were responding to a certain extent. This problem of getting to know each other may have been eliminated if the tutor had had an opportunity for several informal interviews with each mother before the formal program began. In such an interview, the tutor could have become more attuned to the problems which the mothers were most concerned about in their children's development and the areas of development in which they were most interested.

Many of the mothers were difficult to contact if the tutor was unable to be there one week or if the mother had not been home for several weeks and the tutor wanted to check to see if anything was wrong. Also, it was very hard for the tutor to know whether or not a mother was going to be at home at the specified time each week. Most of the mothers made a point of being home and only rarely missed a lesson, but there were a few mothers who were absent more than they were at home. These mothers fell further and further behind in the

lessons and finally dropped out of the program giving as a reason, not having enough time to do the activities during the week.

Because the Parent Involvement Program was started late in the school year, it was decided to extend the program through the summer months. There was a four-week break between the two sessions, and when the program started again, only fifteen of the nineteen mothers were continuing. By the end of the summer, three other mothers had dropped out of the program because of summer jobs and other commitments. The program was conducted for a second year with no additional data-gathering.

Survey Results

The Survey of Parent Attitudes was designed to evaluate the Parent Involvement Program. In its construction it was divided into two sections: the first primarily to elicit evaluative statements about the program, and the second to elicit theoretical or problem-solving responses to issues or situations central to early childhood development.

Of the 19 participants in the program, 15 were able to be interviewed; 4 were unavailable due to personal reasons. The survey was administered to each of the parents individually in her home during the course of a week.

Each of the survey items is discussed below with respect to intent, content and results. Each item is numbered according to its order of analysis. The interviewing order is indicated in parentheses. A copy of the items in the interviewing order is also provided.

Evaluative Items - Rationale:

1. "Why did you get involved in the program?" (2)
   This was meant to determine initial motivation so that

parent satisfaction or dissatisfaction could be evaluated based on their expectations. Interviewees found this question rather difficult to answer specifically, perhaps because they perceived it as being directly evaluative of themselves. Responses were thus difficult to categorize, but generally 60% indicated that they hoped it would help them to work with their own children and others, possibly in a job situation. The remaining 40% found it difficult to verbalize a personal objective; however, both this group and the other 60% during the course of the interview mentioned that a primary factor was the offering of the program in their homes. Most could not have participated on any other basis.

2. "Are you planning to ever get a job working with children in day care, preschool or Head Start? When?" (3)
   This was to directly ascertain vocational interest. 47% indicated yes after youngest children are in school; 13% said maybe; 13% didn't know; 27% indicated no.

3. "What do you consider to be the important goals or objectives of the program? (5)
   Intended to determine whether there was any difference in perceived objectives of program and parents' expectations. 47% emphasized the importance of the parent functioning as a teacher with children; 33% also emphasized the importance as residing in the development of the parent-child relationship, but did not express a clear operational idea; 20% did not know what the goals were.

It is clear through these responses that the theme of parent helping child is a prevalent one; the means of accomplishing it are less clear to the persons interviewed. Many could not express exactly why they entered the program; however, when vocational goals were mentioned, 47% indicated a definite interest. These same persons expressed the concept of parent as teacher, indicating a congruence of perceived program goals and personal motivations.

Evaluative Items - Vocational:

4. "Do you feel better about working with groups of children since beginning the program?" (8)
   Intended to determine perceived effect of program on ability to work with children. 73% said yes, generally indicating that they understood children better; 20% didn't know, and 7% didn't think so.

5. "Do you think this experience would help you get a job in day care, nursery school or Head Start?" (11)
Intended to ascertain perceived practical effect of program, particularly for those with vocational interest. A full 80% thought the program would be of vocational benefit, while 20% didn't know whether it would be or not.

The vocational interest developed into a strong and consistent one. All parents who had previously indicated an interest in preschool work also responded positively to both vocational evaluation items. In addition, 33% who were not vocationally motivated thought the program would be helpful in finding a job.

Evaluative Items - General:

6. "In your opinion are these goals or objectives being accomplished?" (6)
Intended to pick up major dissatisfactions and possibly elicit suggestions. 87% - yes; 13% - don't know. No suggestions offered.

7. "Are you learning anything about children that common sense hadn't already told you?" (7)
Intended to suggest negative slant in balance to general positive orientation of survey and elicit specifics. 33% did respond negatively. Of the 67% who responded positively, all were emphatic and more than half volunteered specific content such as: increased awareness of children's potential, knowledge of developmental periods, individual differences and terminology.

8. "Do you talk to any friends or neighbors about the program? What do they think?" (9)
Intended to corroborate positive attitude toward program; enthusiasm will be communicated. 60% said they did and others would like to get into the program. 13% said yes, but didn't know opinion. 27% said no.

9. "Do you think more people should be involved in programs like this?" (12)
Intended to elicit general attitude through an impersonal approach. 93% responded positively and 7% responded negatively. Suggestions to expand the program were made.

10. "What did you like most about the program?" (10)
Intended to elicit specific positive response. 60% of the

parents expressed a consistent positive response centering on three elements: 1/ the program is brought into the home where close individual work can be done; 2/ parents are learning much about their children and also learning how to teach them; 3/ it is helping the children and developing a closer parent-child relationship. 33% indicated simply that they thought it would help the child. 7% didn't know if they liked anything in particular.

11. "What are you getting out of it?" (13)
Intended to elicit specific positive response. 60% stressed the self-education which was occurring and which would help them to teach children. 27% indicated the satisfaction of seeing their children progress. 13% didn't know.

12. "Have you used anything you have learned thus far in the program? Give examples." (14)
Intended to find out whether specific content of program had been utilized. 80% indicated specifics which had been helpful to them. The responses fell into two major categories: 1/ the concept of individual differences; and 2/ particular learning activities. 7% thought that everything was helpful, but couldn't mention anything in particular. 13% didn't know.

13. "What did you think should be changed when they give the program next year?" (15)
Intended to elicit criticism and suggestions. 80% had no criticisms or suggestions. Three parents voiced the following opinions: 1/ the materials aren't paced right: each activity should be given more time; 2/ initial level of parent knowledge should be ascertained so time isn't wasted going over things they already know; and 3/ there should be parent meetings.

It is apparent from this General Evaluation section that, while generally not able to express critical views, the participants have a very positive attitude toward this program. The only noticeable negative opinion (33%) indicated that some parents consider common sense to be perhaps more important in child rearing even through these "college" techniques might be helpful. It is interesting to note that all parents who indicated a vocational interest in child care also said that they were learning things beyond the confines of common sense. In their responses parents were generally divided into two groups: 1/ those who grasped the role of parent as teacher and 2/ those who wanted to help their children, but were unable to specify further. It was

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also clear in the interviews that the participants really appreciated the fact that the program was brought into their homes where they could get individual attention and not be practically barred from the program because they were home-bound.

Evaluative Items - Miscellaneous:

14. "How long have you been involved in the program (how many sessions)?" (1)
Intended to identify length of exposure. All of the parents indicated involvement since the beginning of the program. It is interesting to note that few knew exactly when that was and none knew how many sessions they had had.

15. "Do you enjoy participating in the program?" (4)
Intended to allow an easy response and an opportunity for interviewer to reinforce subject and elicit general comments. 100% answered positively; one parent had reservations.

Scaling of Responses:

During the course of evaluating the responses to these open-ended questions it became clear that parents' orientations could be generally classified as either helping children or teaching children on some questions, and as positive or negative concerning the program on other questions. Scales for relevant questions were thus constructed as follows:

% Responses	Question
	2. Are you planning to ever get a job working with children in day care, preschool or Head Start? When?
60%	a. V = Vocational interest
27%	b. X = No vocational interest
13%	c. 0 = Don't know
	3. What do you consider to be the important goals or objectives of the program?
47%	a. V = Parent as teacher
33%	b. C = Helping child
20%	c. 0 = Don't know

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% Responses	Question
	4. Do you feel better about working with groups of children since beginning the program?
73%	a. V = Yes (Positive)
7%	b. X = No (Negative)
20%	c. 0 = Don't know
	5. Do you think this experience would help you get a job in a day care, nursery school or Head Start?
80%	a. V = Yes (Positive)
20%	b. 0 = Don't know
	6. In your opinion are these goals or objectives being accomplished?
87%	a. Y = Yes (Positive)
13%	b. 0 = Don't know
	7. Are you learning anything about children that common sense hadn't already told you?
67%	a. Y = Yes (Positive)
33%	b. X = No (Negative)
	8. Do you talk to any friends or neighbors about the program? What do they think?
73%	a. Y = Yes (Positive)
27%	b. X = No (Negative)
	10. What do you like most about the program?
60%	a. V = Parent as teacher
33%	b. C = Helping child
7%	c. 0 = Don't know
	11. What are you getting out of it?
60%	a. V = Parent as teacher
27%	b. C = Helping child
13%	c. 0 = Don't know
	12. Have you used anything you have learned thus far in the program? Give examplex.
80%	a. V = Parent as teacher
7%	b. C = Helping child
13%	c. 0 = Don't know

For the purpose of this analysis non-substantive and non-discriminative questions were eliminated. Each parent response was then independently evaluated and assigned to a response category. Only categories containing actual responses are presented in the scales (i.e. if there were not any "No" responses, that category is not listed in the scale). After all responses

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had been categorized, they were compared with the evaluations made of the same responses for the analyses presented in sections 1 through 15 above. Of the total of 180 judgments made, 6 (3.33%) were found to not agree. This was interpreted to mean that the subjective error in assigning responses to categories was not significant. The content of the categories is intended to compare vocational interest - parent as teacher with non-vocational interest - helping child, as well as general positive, negative and non-responses. The results of this analysis are presented below.

Evaluative Items - Questions*

Parents	2	3	4	5	6	7	8	10	11	12	Total
01	V	V	V	V	Y	Y	Y	V	V	C	9
02	V	C	V	O	Y	X	Y	C	V	V	6
03	V	V	V	V	Y	Y	Y	V	V	V	10
04	O	C	O	V	Y	X	Y	V	C	V	5
05	X	O	V	V	Y	X	Y	C	C	V	5
06	X	C	V	V	Y	X	Y	C	C	V	5
07	O	C	X	O	Y	Y	X	C	O	V	3
08	V	V	V	V	Y	Y	X	C	O	V	9
09	V	V	V	V	Y	Y	Y	V	V	V	10
10	V	V	V	V	Y	Y	Y	V	V	V	10
11	V	V	V	V	Y	Y	Y	V	V	V	10
12	V	C	V	V	Y	Y	Y	V	V	V	9
13	V	V	V	V	Y	Y	Y	C	V	V	9
14	X	O	O	O	O	X	X	O	O	O	0
15	X	O	O	V	O	Y	X	V	C	O	3
Total	9	7	11	12	13	10	11	9	9	12	103

*For listing of questions indicating both order of administration and analysis reference numbers see "Evaluative Items Listing," given below.

Parent assigned numbers appear in the first column followed by the question responses. The last column headed "Total" is a score, assigning a value of "1" to each vocational teaching positive response and a "0" score to each other response, thus establishing a range of 0 to 10. As can be seen the distribution of scores tends toward bimodality with the high subgroup having a mean of 9.11 and the low group having a mean total score of 3.5. It is evident that distinct subgroups defined by attitude and motivation exist within the sample. Further, each of the parents in the high group indicated on question 2 that they were interested in pursuing jobs in child care.

The following general conclusions are stated:

1. Parents have a generally positive attitude toward the program.
2. It is important to have the program offered in the home because most parents could not otherwise participate, and the individual attention is perceived to be beneficial.
3. Parents perceived the main value of the program to be helping them to teach, interact with, and guide children.
4. Parents who have a vocational interest in addition to a parental one are more positive toward the program and seem to be getting more out of it.

Evaluative Items Listing

Survey of Parent Attitudes

Anal Ref.	Admin. Seq.	
14	(1)	How long have you been involved in the program (how many sessions)?
1	(2)	Why did you get involved in the program?

Anal Ref.	Admin. Seq.	
2	(3)	Are you planning to ever get a job working with children in day care, preschool or Head Start? When?
15	(4)	Do you enjoy participating in the program?
3	(5)	What do you consider to be the important goals or objectives of the program?
6	(6)	In your opinion are these goals or objectives being accomplished?
7	(7)	Are you learning anything about children that common sense hadn't already told you?
4	(8)	Do you feel better about working with groups of children since beginning the program?
8	(9)	Do you talk to any friends or neighbors about the program? What do they think?
10	(10)	What do you like most about the program?
5	(11)	Do you think this experience would help you get a job in a day care, nursery school or Head Start?
9	(12)	Do you think more people should be involved in programs like this one?
11	(13)	What are you getting out of it?
12	(14)	Have you used anything you have learned thus far in the program? Give examples.
13	(15)	What do you think should be changed when they give the program next year?

A second section of the survey questionnaire, containing theoretical items, was designed to present each parent with situational questions embodying a primary concept or problem in early childhood development. In general, they were intended to elicit responses which would indicate 1/ whether or not the parents understood what was at issue, and 2/ whether or not they could make a reasonable and constructive response having grasped the problem. Each item will be discussed individually in its order of presentation.

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Theoretical Items:

1. "Some people think that children learn things pretty much automatically as they grow up; others think that children can learn anything at any time if it's taught right. What do you think?"
(Concept: early learning and maturation) 47% thought that children could learn anything; 20% indicated a combination of teaching and maturation; 20% thought children learned only as they matured; 13% failed to understand the question.

2. "A lot of children have trouble getting along with others because they really get angry when they can't have everything they want. What do you think is the best way to handle a violent temper tantrum?"
(Concept: violent behavior) 33% responded that the behavior was attention getting and should be corrected by diverting energy to another activity and, if that doesn't work, employing physical punishment. 20% suggested immediate physical punishment. 14% thought that the best thing would be to ignore the behavior and let it work itself out. 33% had no suggestions. It was apparent that this problem was a familiar one and, although some constructive approaches were mentioned, physical punishment was the typical resort. Many parents grasped the attention-getting intent of the behavior, but few realized that their handling of it was reinforcing a perceived undesirable effect.

3. "Some programs for preschool children try to teach advanced things like reading and math. Do you think such young children can really learn these kinds of things and is it good for them?"
(Concept: early childhood potential) 33% were very positive in their replies; another 27% were positive with some reservations about the learning content. 33% did not think such early learning was possible or good. 7% did not understand the question. The majority of the parents were appreciative of young children's potential; however, the negative replies were substantial and delivered with conviction.

4. "Jimmy is a boy who is usually selfish with his toys and often hits and pushes the other children when he is in a group. One day he gave his favorite truck to another boy to play with. What would you do to try to make him share like that again?"
(Concept: positive reinforcement) 47% recommended positive verbal reinforcement; 7% also included tangible rewards. 6% indicated coercion through punishment. 40% had nothing to suggest.

5. "One boy in a nursery school just isn't interested in any of the activities that the other children are doing. He seems to only like motorcycles and will pay attention to little else while the teachers are trying to work with colors, shapes and

other things. What would you do to try to get him involved in the group playing and learning?"
(Concept: inattentiveness and motivation) 53% suggested using the motorcycle as a vehicle for teaching other things, for instance, the shapes and colors involved in motorcycles. 13% said the motorcycles should be taken away and the child forced to attend to the lessons. 34% didn't know what to do.

6. "Jimmy always seems to be bad when he is with the other children. He hits them, takes the things they are playing with and ruins the activities that are going on. Why do you think he does these things and what is the best way to handle him?"
(Concept: aggression, attention and negative reinforcement) 60% of the parents thought the behavior was caused by a need for attention; 40% didn't understand the problem or its solution. Of those who indicated the need for attention, 44% thought the solution was to give more attention, 44% suggested a change of activities to direct aggression and develop self-concept, 11% through he should be ignored, and 1% thought he should be punished.

7. "Some people think that the best way of making children behave is to talk it out; others think that the best discipline is a good spanking. What do you think?"
(Concept: discipline and physical punishment) 87% of the parents indicated that a combination of discussion and punishment is needed to maintain discipline; 7% advocated spanking only, while 6% suggested talking only.

8. "Sarah is always happy to play with the other children, but she plays her own games almost as though the other children weren't there. Do you think that this is normal and, if so, what kinds of different play relationships will she get into when she gets older?"
(Concept: development of play relationships) 60% thought the behavior normal and that play with others would develop later. 20% thought it not normal and 20% didn't know.

9. "Children always like to play, but what do you think it does for them?"
(Concept: importance of play) 67% focused on the importance of play for learning and development. 20% saw its major benefit in physical health. 13% emphasized its role in social relationships.

10. "Jimmy thinks that he is really smart and tough although he can't do a lot of things the other children his age can - like recognizing shapes and colors. How do you think he feels about himself and what do you think about him?"
(Concept: self-concept and individual differences) 40% opined that the boy in question had a very poor self-concept and tried to cover it up with a "tough guy" facade. 27% indicated that individual differences were the cause and that a real problem did not exist. 33% didn't know.

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11. "Jimmy is anxious to explore any new thing that you give him. He likes to do everything by himself and learn about it by himself. Do you think this is good and why?" (Concept: curiosity and independence) 40% thought the behavior was good because exploration is a means of learning and independence is a positive characteristic. Another 40% indicated that it was good but couldn't verbalize the reason. 13% thought it was harmful because children shouldn't do things alone, and 7% didn't know.

12. "Some people think it's important to teach children to take care of themselves. Do you think this is necessary and why?" (Concept: hygiene and safety) 40% pointed to the need for personal hygiene and safety training. Another 40% stressed the importance of self-protection, particularly when the parents might not be around. 20% thought it was important, but couldn't elaborate.

These items elicited much comment and several general themes developed. Discipline was a primary concern to the parents interviewed. When the question of procedure was posed directly, the result was a strong consensus (7) for a combination of discussion and punishment to effect a behavior change. However, when hypothetical situations suggesting disciplinary problems (2, 6) were presented, many parents could suggest nothing, or indicated actions that would probably reinforce undesirable behavior. Likewise most parents seemed to understand children's need for attention, but few could suggest ways of handling it that would not maintain or increase dependence. Very few parents grasped children's aggression as natural and in need of constructive outlets. All parents had some idea of the importance of play; many viewed it as a basic learning experience; few gave the impression of understanding its developmental stages. An awareness of children's self-concept and individual differences was apparent and, in the interviewer's opinion, a result of the parent program. Likewise, an increased awareness of verbal reinforcement, working with children's natural interests and early potential, seemed to be related to participation in the program. The last question was intended to be an easy one which everyone could answer to end the interview positively. It was interesting to

find that it was interpreted both as self-care and self-protection. In the latter case the environment is apparently seen as somewhat threatening.

In order to present an overview of the responses to the theoretical items, the following analysis was performed. Each response was independently evaluated to determine its appropriateness relative to generally held opinions in the early childhood field. A value of +1 was assigned to those responses judged reasonable and constructive. A value of -1 was assigned to those judged incorrect or detrimental. A zero value was accorded to responses indicating a lack of comprehension on the part of the respondent. Totals were then obtained for each individual and each item. The results are presented in the table below.

Theoretical Items - Questions

Parents	1	2	3	4	5	6	7	8	9	10	11	12	Total
01	+1	-1	0	+1	+1	-1	+1	-1	+1	+1	-1	+1	3
02	+1	0	-1	0	-1	0	-1	+1	+1	+1	+1	+1	3
03	+1	-1	+1	+1	+1	+1	+1	+1	+1	+1	+1	+1	10
04	+1	-1	+1	-1	+1	+1	-1	-1	+1	+1	0	+1	3
05	0	0	-1	0	0	0	+1	0	+1	0	0	0	1
06	0	0	-1	0	0	0	+1	+1	0	0	0	0	1
07	-1	+1	+1	0	0	0	+1	0	0	+1	0	+1	4
08	+1	-1	-1	+1	-1	-1	+1	0	0	+1	-1	+1	0
09	+1	-1	+1	+1	+1	+1	+1	+1	+1	+1	+1	+1	10
10	+1	+1	+1	0	+1	-1	+1	-1	0	+1	+1	+1	6
11	+1	+1	+1	+1	+1	+1	+1	+1	+1	+1	+1	+1	12
12	+1	-1	+1	+1	+1	-1	+1	+1	+1	+1	+1	+1	8
13	+1	0	+1	+1	+1	-1	+1	0	+1	-1	+1	+1	6
14	-1	-1	-1	+1	0	-1	+1	+1	+1	-1	0	+1	0
15	+1	0	+1	0	0	-1	+1	0	+1	0	+1	0	4
Total	9	-4	4	7	6	-3	11	4	11	8	6	12	71

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As can be seen there was a fair dispersion of scores both for items and individuals. The items on violent behavior, aggression, attention and negative reinforcement (2, 6) yielded the poorest responses; punishment, self-care, and play (7, 9. 12) yielded the best, while the others obtained a very mixed response. These all have implications for program development.

Again as in the evaluative items the distribution of individuals was bimodal with a high group having a mean of 8.67 and a low group with a mean of 2.38. The composition of these subgroups as defined on the various criteria is presented in the "Summary" table.

Summary

Parent	Vocational Interest Subgroup	High Evaluative Subgroup	High Theoretical Subgroup
01	X	X	0
02	X	X	0
* 03	X	X	X
! 04	0	0	0
! 05	0	0	0
! 06	0	0	0
! 07	0	0	0
08	X	X	0
* 09	X	X	X
* 10	X	X	X
* 11	X	X	X
* 12	X	X	X
* 13	X	X	X
! 14	0	0	0
! 15	0	0	0

* Indicates assignment to all 3 listed subgroups.
! Indicates assignment to none of the listed subgroups.

From this display it can be concluded that the persons participating in the program with a vocational interest are prone to evaluate the program highly as well as do better in handling the types of theoretical issues and situations posed in this survey. Finding the cause of this consistent phenomenon would be an interesting pursuit which is outside the scope of the present report. It suggests that professional involvement - training and/or working - may be a vehicle for broadly increasing the quality of childrearing through both enhanced motivation and learning. If a consequent effect on children could be shown, this type of program could prove critical in both manpower training and early childhood development.

Theoretical Items Listing

Survey of Parent Attitudes

1. Some people think that children learn things pretty much automatically as they grow up; others think that children can learn anything at any time if it's taught right. What do you think?

2. A lot of children have trouble getting along with others because they really get angry when they can't have everything they want. What do you think is the best way to handle a violent temper tantrum?

3. Some programs for preschool children try to teach advanced things like reading and math. Do you think such young children can really learn these kinds of things and is it good for them?

4. Jimmy is a boy who is usually selfish with his toys and often hits and pushes the other children when he is in a group. One day he gave his favorite truck to another boy to play with. What would you do to try to make him share like that again?

5. One boy in a nursery school just isn't interested in any of the activities that the other children are doing. He seems to only like motorcycles and will pay attention to little else while the teachers are trying to work with colors, shapes and other things. What would you do to try to get him involved in the group playing and learning?

6. Jimmy always seems to be bad when he is with the other children. He hits them, takes the things they are playing with and ruins the activities that are going on. Why do you think he does these things and

what is the best way to handle him?

7. Some people think that the best way of making children behave is to talk it out; others think that the best discipline is a good spanking. What do you think?

8. Sarah is always happy to play with the other children, but she plays her own games almost as though the other children weren't there. Do you think that this is normal and, if so, what kinds of different play relationships will she get into when she gets older?

9. Children always like to play, but what do you think it does for them?

10. Jimmy thinks that he is really smart and tough although he can't do a lot of things the other children his own age can - like recognizing shapes and colors. How do you think he feels about himself and what do you think about him?

11. Jimmy is anxious to explore any new thing that you give him. He likes to do everything by himself and learn about it by himself. Do you think this is good and why?

12. Some people think it's important to teach children to take care of themselves. Do you think this is necessary and why?

General Conclusions

The Parent Involvement Program was successful in that the major objectives of the program were achieved. There was a large increase in the amount of interaction which occurred between the mother and her preschool child. The mother was also a little more understanding of the child's behavior in certain situations. Some of their fears about the possible slowness of their child in such areas as toilet training or about a certain behavior such as saying "no" all the time were alleviated through the discussions. Also, all of the mothers witnessed improvements in their child's physical, mental, emotional, and social skills. Finally, some of the mothers by the end of the program found themselves interested in a possible vocation relating to working with preschool children.

Of the two sessions of the program, the Spring session seemed to be much more successful. With the arrival of the long summer days, the participating

children lost some interest in the activities if they could not be done outside or if the child had to sit for any length of time during very warm days. The lessons were much harder for the tutor to cover, because all the children in the family were home from school. It was also hard for the mother to devote her attention to the lessons while the children were running around the house or playing outside. Many of the mothers found it easier to work on the activities in the evening, although there were still distractions from the older and younger children.

After the first year, the program was extended for a second year and currently consists of twenty-four lessons which are arranged in a hierarchical continuum - i.e., the same areas of child development are covered in more and more depth as the program progresses. Summer sessions have been eliminated and a series of informal interviews now generally take place between the tutor and each mother before the actual program begins.

It is hoped that further continuations of this program will provide an opportunity not only for reassessment of its effect on participating parents in order to confirm present findings, but also for a more objective measurement of its effects upon the children of these parents.

The successful operation of the Parent Involvement Program has given support to prior research relating to the efficacy of such an approach. Moreover, results of the Survey of Parent Attitudes yielded very positive findings reflecting on the program in general as well as providing interesting insights as to the types of orientations of parents on the low socioeconomic stratum and the kinds of changes in orientation toward preschool children which were engendered by participation in this Parent Involvement Program.

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